LIBRARY OF PRINCETON
APR 15 1903
THEOLOGICAL SEMINARY.

BD 555 .T53 1900
Tigert, Jno. J. 1856-1906.
Theism

THEISM

THEISM

A SURVEY OF THE PATHS THAT LEAD TO GOD

CHIEFLY IN THE LIGHT OF THE HISTORY OF PHILOSOPHY

BY

JNO. J. TIGERT, LL.D.

SOMETIME PROFESSOR OF MORAL PHILOSOPHY IN VANDERBILT UNIVERSITY

London:

CHARLES H. KELLY, 2, CASTLE STREET, CITY ROAD, E.C., AND 26, PATERNOSTER ROW, E.C.

PREFACE

PHILOSOPHY has been prevailingly theistic; science, atheistic—without God. In no opprobrious sense is this said of science; its professed limitations plausibly and perhaps really, from the standpoint of mere method, exclude the express recognition of God, though Sir Isaac Newton, and some other physicists of his day, thought and wrote differently. Philosophy, if not always expressly a search for God, has, in its effort to understand reality as a whole, usually found him, issuing by the avenues of metaphysics on the high table-lands of theology with their limitless outlook. Science has rested in matter, force, and law; asking and giving little or no explanation of these data.

Philosophy, when atheistic, whether taking the form of the materialism of Democritus, Leucippus and the ancient atomists, or that of Diderot and the French encyclo-

pedists of the eighteenth century, or that of Haeckel and Clifford and modern Germans and Englishmen, has had, judged by its own standards, no orthodox standing in its own schools. Atheistic philosophy is an outlaw and an Ishmaelite. Science, when theistic, has in its own camp been suspected of heresy and treachery.

Xenophanes and Anaxagoras; Socrates, Plato, and Aristotle; Descartes, Spinoza, and Malebranche; Leibnitz, Locke, and Berkeley; Kant, Hegel, and Lotze—great names in the history of philosophy—have been desperately in earnest with the problem of interpreting the universe in its ultimate terms; and thus have been led by many roads to a single terminus—God. This unanimity of philosophy, if not unnoticed, has scarcely been accorded its proper weight. A history of philosophic theism is to this day a desideratum which philosophers and theologians alike, in their haste to make new theistic philosophies, have

neglected to supply. The achievements of the past are by all odds more worthy of attention than the speculations of the present, except as these gather the ripe fruit that clusters on the tree of knowledge.

The dependence of the world on mind is theism; of mind on matter is atheism. The absolute independence of each—its isolation from the other—is an impossible philosophical thesis. The worlds of mind and matter are not double over against each other in Cartesian opposition and separation. The conception of mutually exclusive worlds, material and mental, works smoothly enough, so long as a so-called purely physical phenomenon, remote from mind, requires to be inserted only in the physical series of our experiences, and to be explained in the terms of mechanics; and so long as a purely mental event, remote from matter and its properties of inertia and extension, requires to be inserted only in the psychical series of our experiences and to be explained

in terms of the mental life; but as soon as we reach the hair-line boundary between the physical and the psychical, and in crossing that line the same event or phenomenon requires to be inserted in both the physical and the psychical series—as nerve vibration and brain change in the former, explicable in terms of matter and motion, and as sensation of definite quality in the latter, explicable only in terms of consciousness—men begin to cry aloud of inscrutable mystery, of the unthinkable, the absurd, the impossible. We need not wonder at this mad flight to the inscrutable and this paralyzed amazement in the presence of the impossible; for the phenomenon which we seek doubly to classify and to understand is itself not double but single. Experience is one. Its seamless robe cannot be rent. If the phenomena of this one indiscerptible experience find their classification and explanation in matter and mechanics, materialism and atheism are true. If they find their classifica-

tion and explanation in terms of mind and purpose, spiritual reality and theism are true. To classify and explain in the terms of both series, material and psychical, is transparently absurd and has always been found impossible.

One is sometimes startled by the theological confession that theism is indemonstrable. Once in a large assembly of ministers, consisting of all the Protestant pastors of a great city, among whom were college and seminary graduates, I heard the assertion of a doctor of divinity that the existence of God could not be proved pass unchallenged save for a solitary voice lifted in protest. The burden of proof lies on the theist as against the merely negative and skeptical atheist who declares that he cannot rationally resolve his doubts. On the other hand, the burden of proof lies on the positive and dogmatic atheist who declares there is no God. If neither the theist nor the dogmatic atheist can make a case, then something

like skeptical atheism, on the one hand, or a theism accepted on practical grounds, but confessedly without sufficient rational foundations, on the other, seems to result. I believe with all my heart that the existence of God is demonstrable, and appeal to the gulf stream of the history of philosophy in vindication of my conviction. In this contention I am undoubtedly keeping the best of philosophical company.

The only immediate source of our knowledge of mind is the human consciousness: in it also is to be found our immediate knowledge of reality. By analysis of the mind and its operations the categories of reality are to be found. If the mind is the product of the body, or of a material world operating through the body and aided by it, psychology is swallowed up in physiology and physics—as many in our day contend—and the case for theism seems to me to be lost. If the material world is through and through a double product of mind—on the

side of God a product of divine activity and intelligent efficiency, and on the side of man a product of organizing percipiency and rational power, which find in the world the intellect and meaning that God has put into it—the case for theism is made out. I am unable to see how it can be made out in any other way.

The printed book is the fourth or fifth edition of my manuscript, which I have been working over in one way or another since 1884–5. This method of composition has its obvious advantages and disadvantages. It is difficult to eliminate every trace of overcome standpoints while seeking to preserve remainders of truth. This method enables one, indeed, to distinguish between evanescent impressions, with a merely psychological and personal history, and permanent convictions grounded in the impersonal principles of reason; but it also robs the writer of that luxury of composition which

belongs to one who flings off mature and final convictions in the white heat of a single casting which takes the exact form of the matrix. I have endeavored to incorporate from time to time the results of fresh literature, my reading in philosophy probably having been somewhat wider since I ceased teaching than during that period. As a consequence, a better, though concise, statement of my view will sometimes be found in the somewhat numerous footnotes. I have also sought to confine to the footnotes more abstruse and recondite matters which readers who do not feel an intellectual necessity for following every detail of the presentation or argument may often omit without serious damage to the text.

I began my work as a teacher as a thoroughly convinced natural realist of the Scottish school. In using Sir W. Hamilton's "Metaphysics" as a text-book with successive classes in Vanderbilt University, I was compelled with reluctance, and even stub-

born resistance, to abandon position after position held by him and his school of natural dualism, until that ground was given up as untenable. My lectures degenerated into continuous criticisms and exposures of Hamilton's unsound positions and radical inconsistencies. It was then that I began to break new ground in fields in which I found, and still find, such metaphysicians as Hermann Lotze, and such psychologists as George T. Ladd, my best general guides. Dr. James Ward's "Naturalism and Agnosticism" is, among recent books, a most decisive scientific refutation of dualism. The problem which Descartes set for modern philosophy in his false isolation and opposition of mind and matter, and his impossible division of the one world of experience into incommensurable halves, has, in these lectures of Dr. Ward's, received an exhaustive scientific solution, and the devil of materialism is at last in a fair way of being exorcised. I have allowed nothing to stand, however, of whose

truth I was not convinced, and which, judged by my own intellectual history, would not be of some real value to some minds at some stage of their development.

In passing the volume through the press, I have once more carefully revised the whole. The book is not perfect—far from it. No reader can be more sensitive to its defects than the author. But I have thought it not unpardonable to gather up the fruit of some years of toil in the academic chair as a contribution to the question it discusses.

JNO. J. TIGERT.

NASHVILLE, 31 *December*, 1900.

CONTENTS

CHAPTER I

PAGE

STATEMENT OF THE QUESTION 1

CHAPTER II

ARE PROOFS NECESSARY AND POSSIBLE? 6

CHAPTER III

ANSELM'S ARGUMENT: STATEMENT AND REFUTATION 14

CHAPTER IV

THE CARTESIAN ARGUMENT: MANKIND'S POSSESSION OF THE IDEA OF GOD 30

CHAPTER V

THE HISTORICAL ARGUMENT: THE CONSENSUS GENTIUM 81

CHAPTER VI

THE ARGUMENT FOR A FIRST CAUSE: ITS ALTERNATIVES CONSIDERED 91

CHAPTER VII

THE NATURE OF CAUSE 128

CHAPTER VIII

THE ARGUMENT FROM DESIGN: CHARACTER AND ANALYSIS 150

PAGE

CHAPTER IX

The Nature of Final Cause and Its Harmony with Efficient Cause 167

CHAPTER X

Design in the Effect Proof of Intelligence in the Cause 183

CHAPTER XI

Some Additional Instances of Design Studied 193

CHAPTER XII

A Theistic Argument Restated 204

CHAPTER XIII

Of the Knowledge of "Things" 234

CHAPTER XIV

Professor Huxley and Bishop Berkeley 269

CHAPTER XV

The Theory of Knowledge: Idealistic Realism 290

CHAPTER XVI

A Prescription for Modern Materialism 331

Index 341

THEISM

CHAPTER I

STATEMENT OF THE QUESTION

WHETHER any or all of the arguments ordinarily brought forward to prove the existence of God could convey to those altogether destitute of the idea of a deity, *first*, the notion of God as a person, self-existent, eternal, immutable, a spirit of infinite power, wisdom, and goodness, the creator and upholder of all things, and, *secondly*, satisfactory proofs of his existence, is a question which the curious may suggest, but which it is hardly possible to settle. It cannot be put to actual test, for some knowledge—a notion—of deity has been in the world from the dawn of history. This is evidenced not only by the ancient writings of the Jews, but by the earliest historical re-

Universality of the Idea of a God

mains and the extant beliefs and customs of all peoples—Asiatic, African, European, American, Polynesian. Once projected within the sphere of human knowledge, once lodged among the thoughts of the race, from whatever source and in whatever manner, this thought or notion of God, however abused or distorted, has never been permitted to perish. Observe: universal history is not here cited to prove the existence of God, but only mankind's general possession of the idea of a God.

A Large Conclusion

The existence of God, with all the attributes which philosophy and Christianity alike ascribe to him, is a very large conclusion to establish; and the data and premises conducting to it must be correspondingly comprehensive and gigantic. Though the facts and principles which constitute the several arguments for the divine existence might not necessarily conduct a wholly unenlightened person—if one destitute of the idea of God could be supposed—to the

knowledge of God, before unknown; yet, given even a hint of the divine existence, reason and nature and history afford abundant and satisfactory, not to say demonstrative, proofs that God is the best and only possible solution of the problem suggested by the survey of man and nature. It would be indeed a gigantic mind that could frame the gigantic premises of the syllogism which would shut up the Infinite God in its conclusion as a newly discovered and necessary result of a rational process; but a much less highly endowed mind that had been already sprung to the utmost exertion of its powers by a patient investigation and analysis of the facts and principles which enter into these premises, though unable to reach and formulate the high conclusion, might clearly perceive the necessary relation of this conclusion to the premises, if the conclusion were once suggested from without. It is one thing to master Newton's *Principia* as a text-book, and quite another to be its

Conceded Limits of the Thesis to be Established

author. It is one thing to make a synthesis of the facts of nature and history and of the deliverances of reason, and declare God, before an unsuspected solution of the problem of the world and of man, to be the necessary result, and quite another thing, the notion of God being already in possession, or the existence of God being given as a thesis to be established, to gather up the sufficient evidences of it. This latter, in the nature of the case, is all that can be undertaken.

An Impracticable and Useless Test

It is useless to inquire whether a human being, reared in isolation and receiving no communications from his kind upon theological or religious subjects, but perfectly instructed in philological, philosophical, mathematical, scientific, and historical learning —so far as this could be accomplished without trespassing on the forbidden territory— would ever arrive at the knowledge of God. Such an experiment will never be undertaken. It would not be decisive if it were found that this person did not arrive at the

knowledge of God. For it is not necessary to hold that such acquirements would inevitably generate the idea of God, but only, if the notion of God were given, that these acquirements would afford indisputable proofs of his existence. But whatever the result in this hypothetical case might be, it is certain that the feat of rationally discovering God has never been accomplished in the past.[1] The discoverer of God, though a greater genius than Euclid or Newton or Copernicus, has not recorded his name on the page of history. We have no reason to suppose that this is the route by which mankind came to the knowledge of God.

Who Discovered God?

[1] Xenophanes, the founder of Eleaticism (born in 569 B.C., and living to the age of ninety-two), was the earliest Greek philosopher to combat the anthropomorphism of Homer and Hesiod and to announce the doctrine of the One, all-controlling Godhead (the Eleatic ἓν καὶ πᾶν). God is all eye, all ear, all intellect; unmoved and undivided, he moves and rules all things by his thought. See Schwegler's "History of Philosophy" (Seelye's ed.), pp. 33, 34, and Ueberweg's "History of Philosophy," I. 51–54, where all the philosophical fragments preserved from Xenophanes are given.

CHAPTER II

ARE PROOFS NECESSARY AND POSSIBLE?

Calderwood's Dictum

PROFESSOR CALDERWOOD, of Edinburgh, whose "Philosophy of the Infinite" is a lucid and conclusive refutation of the nascent agnosticism of Sir W. Hamilton and Dean Mansel, and of the full-blown fruit of that seed borne in Mr. Herbert Spencer's doctrine of "The Unknowable," indulges elsewhere in this dictum: "The reality of the divine existence is a truth so plain that it needs no proof, as it is a truth so high that it admits of none."[1] This assertion naturally divides into two branches, against which I maintain the following theses:

Proofs Necessary

1. *Proofs of the divine existence are necessary.* The existence of God, though the deity may be the true and necessary answer to a human need and *instinct*, is neither an *innate* knowledge, nor an *intuitive* truth.

[1] "Moral Philosophy," p. 228.

Knowledge of the Divine Existence not Innate

(1) It is not an *innate* or *connate* knowledge lodged in the mind of every person at birth, for philosophy has long ago given up as untenable the notion of *positive conceptions of objective realities* as part of our original mental furniture. The native "God-consciousness" is a chimera. In the seventeenth century Bishop Pearson was able to write:

Bishop Pearson

"For although some have imagined that the knowledge of a deity is connatural to the soul of man, so that every man hath a connate, inbred notion of a God, yet I rather conceive the soul of man to have no connatural knowledge at all, no particular notion of anything in it from the beginning; but being we can have no assurance of its preëxistence, we may more rationally judge it to receive the first apprehensions of things by sense, and by them to make all rational collections. . . . If all the knowledge which we have comes successively by sensation, instruction, and rational collection—then must

we not refer the apprehension of a deity to any connate notion or inbred opinion; at least we are assured God never charged us with the knowledge of him upon that account."[1]

There is no connate knowledge of *things* or *existences*, but only an intuition of *principles*, which experience, on proper occasion, reveals in consciousness.

(2) It is not an *intuitive* truth. The test of an intuitive truth is that it shall be of such a nature that the contradictory of it is not only false, but inconceivable. Such a truth is self-evident and universal; so plain, indeed, that it neither needs nor admits of proof, because it is incapable of intelligent denial: such are the axioms of mathematics. But atheism, antitheism, pantheism, materialism, polytheism, agnosticism, are all in greater or lesser degree contradictory of Christian theism; and yet they are not only conceivable systems of the universe, but have been held

The Divine Existence not an Intuitive Truth

[1] "On the Creed," American edition, pp. 26, 27.

and taught by men of unquestioned sanity; some of them, as pantheism, being especially attractive to gifted and cultivated minds—such as that of Spinoza. If the first position, that "the reality of the divine existence is a truth so plain that it needs no proof," were correct, both atheism, or rejection of the divine existence, and skepticism, or doubt concerning it, would be excluded. A large section of the intellectual history of mankind, as every student of the history of philosophy and human opinions knows, constitutes the insuperable obstacle to the acceptance of the statement. It is a vice of many reasoners, when pressed to the wall, to declare their position to be an "intuitive truth," indisputable and necessary. The intuitive truths are few, and the theist need not suffer the reproach which arises from the frequent flight to this city of refuge. As Pearson says, it is "a very irrational way of instruction to tell a man that doubts of this truth that he must believe it because

An Insuperable Obstacle

it is evident unto him, when he knows that he therefore only doubts it because it is not evident unto him." [1]

Proofs Possible

2. *Proofs of the divine existence are possible.* Professor Calderwood is again wrong when he asserts that this "is a truth so high that it admits of none." This contention of his might be dismissed with a bare repetition of the statement that only intuitive truths are of this nature. But it is permissible to add that, if he were correct in this opinion, Dr. Calderwood would not have found it possible straightway to adduce arguments having the ends of proof in view, and we should not be able, as we shall do in this essay, to canvass the evidence. Moreover, he is self-contradictory when on the next page (229) he declares that the divine existence is finally "accepted as the only adequate solution of the problem of finite existence. As already suggested, the raising of this problem belongs to a period of philosophic

[1] "On the Creed," p. 27.

thought, and in seeking a solution of it the existence of a self-sufficient First Cause is accepted as adequate, and as the *only* adequate, solution." Twice Professor Calderwood declares the divine existence to be the "only adequate solution" of the problem of finite existence. Now what is the nature and province of *explanation?* Is it not to find the least and simplest, but rationally necessary, assumption with regard to the nature and operation of a cause which will suffice to account fully for the effect? It follows, therefore, if the deity is "the only adequate solution" of the problem of finite existence, that by the existence of the universe, with its known characteristics as an effect, the existence of God is proved as its necessary cause. The acceptance of a given explanation as the "only adequate solution" of a problem arising out of known facts, carries with it the acknowledgment that the facts are an exclusive and sufficient proof of the elements of the solution.

The Only Adequate Solution

Our Knowledge of God and of Man One

We know God after the same manner that we know man. We cannot immediately inspect by the senses the human spirit any more than we can the divine. The Scriptures say, No man hath seen God at any time. It is just as true that no man has seen another man at any time. By the speech and actions of a person, as displayed by a human body, one is able to conclude the existence of a rational and volitional spirit which orders its own processes, controls the body, and is the real author of all those manifold expressions of which the body is the medium. So by the structure of the universe, including man, we may conclude the existence of God. It is a pleasure, however, to accept as sufficiently correct in principle the following statement of Dr. Calderwood's: "The legitimate use of a discursive process is not in an attempt to reach the fact of the divine existence as a logical conclusion, but in testing the harmony between the belief and the facts of

Correct Method

existence. This latter use of the reasoning process is in accordance with the scientific methods followed in all departments of investigation."[1] And, I may add, is in essential harmony with the preliminary statement of the question already given.[2]

[1] "Moral Philosophy," p. 230.

[2] For a full discussion and refutation of the doctrine that the existence of God is an innate knowledge, or an intuitive truth, see Summers's "Systematic Theology," I. 49–53.

CHAPTER III

ANSELM'S ARGUMENT: STATEMENT AND REFUTATION

Ontological Argument Disreputable

SINCE Kant's day the ontological argument, as it is called, though not abandoned, has fallen into disrepute. Most men distrust *a priori* demonstration when applied to such a subject as the divine existence. The nature of the argument I shall consider in the next chapter approaches more nearly that of the ontological, rejected as invalid in this chapter, than does any other included within this survey; yet it may be possible to show some essential points of difference.

Anselm

The ontological argument was current among the schoolmen from the times of Anselm, archbishop of Canterbury (born in 1033, died in 1109), often regarded as the first of the scholastics, and styled by Neander the Augustine of his age. Anselm's theological importance reposes securely upon

two great pillars: he was the original propounder of the ontological argument for the existence of God, and he was the first to undertake a scientific statement of the doctrine of atonement, with which his most celebrated work, *Cur Deus Homo?* occupies itself. Though accorded little favor by Thomas Aquinas, Albertus Magnus, Duns Scotus, and others, who relied chiefly upon various *a posteriori* arguments and inclined more and more to place the doctrine of God's existence with that of the Trinity among the *dogmas of the faith*, incapable of philosophical demonstration, but to be received on the authority of revelation, guaranteed in turn by the Church, this ontological or Anselmic argument acquired considerable currency, and still has a strange fascination for some minds, for it promises much: nothing less than an *a priori* demonstration of the being and attributes of God. Hegel, among illustrious nineteenth-century thinkers, seems well content with Anselm's view, affirming

Aquinas, Albert, Duns Scotus

Hegel

Shedd, Flint, Lotze

the ontological to be the one satisfactory proof of the divine existence. Among professed theologians, Dr. W. G. T. Shedd, of the Union Theological Seminary, and Professor Robert Flint, author of two classic volumes, "Theism," and "Anti-theistic Theories," assign a force, almost or quite demonstrative, to the Anselmic argument. Hermann Lotze, too, though denouncing Anselm's logic, accepts his conclusion in an eloquent passage, a part of which will presently be cited.

Anselm's Argument

Anselm's argument may be thus formulated. When we consider what the term God signifies—or what the concept of the deity includes—we evidently understand by it that which must be thought as the greatest—"*aliquid, quo nihil majus cogitari potest*" is Anselm's language. Even David's fool, who declares there is no God, must concede that the greatest possible thought, the notion of God, is in his heart. But to exist actually *(in re)*, as well as in thought

(in intellectu), is greater than to exist in thought alone; therefore God, the concept of whom involves the element of the greatest possible existence, exists not only in thought, but actually, or, as Anselm phrases his conclusion, "*Existit ergo procul dubio aliquid, quo majus cogitari non valet, et in intellectu, et in re.*"

A Translation

Of Anselm's argument, as found in the second chapter of his *Proslogion*, Dr. Shedd supplies us with the following translation, either his own or that of Maginnis (in the *Bibliotheca Sacra*, 1851): "Surely that, than which a greater cannot be conceived, cannot exist merely in the mind alone. For if we suppose that it exists only subjectively in the intellect, and not objectively in fact, then we can conceive of something greater, we can conceive of a being who exists objectively, and this is greater than a merely mental existence. If, therefore, that than which a greater cannot be conceived exists only in the conception or

intelligence, and not outwardly in fact, then that very thing than which a greater cannot be conceived is something than which a greater can be conceived—which is self-contradictory. There exists, therefore, beyond doubt, both in the mind and in reality, a being than which a greater cannot be conceived." [1] Such an argument the learned modern theologian proceeds at once to expound and to indorse!

Its Fallacy

It is hardly necessary to tarry to expose the glaring fallacy of an argument which proceeds from *existence in thought* to *existence in fact*. Gaunilo, a monk contemporary with Anselm, in his little work, *Liber pro Insipiente* (a defense of the fool), illustrated the futility of Anselm's argument by reference to a fabled island, filled with abounding riches and delights, and *perfectly* constituted for the happiness of its inhabitants. Confessedly this island is more excellent than any known land; for if it is *most*

[1] Shedd, "History of Christian Doctrine," I. 233, 234.

perfect, there cannot even be imagined a *more perfect* region. But even the known, imperfect lands exist in reality; therefore the *most perfect* cannot exist in conception alone, but must also exist in reality. Its very perfection involves its reality, since to be both in reality and in conception is better than to be in conception alone. Therefore this fabled island actually exists.

Dr. Shedd's Defense

Dr. Shedd concedes, as he must, that such an argument from existence in thought to existence in fact is invalid, but strives, both in his original exposition of Anselm's argument and in his attempted refutation of Gaunilo's objection, so to state the argument as to avoid the difficulty. Allowing that *any* existence in thought does not imply existence in fact, he thinks an essentially different case is presented when he urges that *necessary* existence in thought carries with it necessary existence in fact. Let us hear him:

"The force of this [Anselm's] argument

depends entirely upon the characteristic of 'necessity of existence.' This is an integral part of the idea of the most perfect being, and *does not enter into the idea of any other being.* All other beings may or may not exist, because they are not the most perfect conceivable. Their existence is contingent; but that of the *First Perfect* is necessary. Hence the idea of God is a wholly *unique* idea, and an argument can be constructed out of it, *such as cannot be constructed out of the idea of any other being.* And one of its peculiarities is that it must have an objective correspondent to itself. . . In the instance, then, of any other idea but that of God, the mere idea in the mind is not sufficient to evince the actual reality of the object. But in the instance of the solitary and totally unique idea of the absolutely Perfect, the mere idea is sufficient for this, because it contains the element of necessity of existence."[1]

[1] "History of Christian Doctrine," I. 232, 233.

After citing Gaunilo's objection, Dr. Shedd states the same argument somewhat more elaborately:

Restatement

"But an objection of this kind fails to invalidate Anselm's argument, because there is no logical parallelism between the two species of ideas. It overlooks the fact that the idea of the deity is wholly solitary and unique; there is no second idea like it. As Anselm remarks in his reply to Gaunilo, if the island above mentioned were *the most perfect thing conceivable*, then he would insist that the existence of the idea in the mind would be evidence of the existence of the island itself. But the idea of the island does not, like the idea of God, contain the elements of *absolute perfection* of being, and *necessity* of being. And the same is true of the idea of a griffin, or of a chimera, or of any imaginary or contingent existence whatever. The idea of a man or an angel does not carry with it that the man, or the angel, cannot but exist, and that his non-existence

is inconceivable. But the idea of God, as a being totally *different* from all created and contingent beings, does carry with it the property of necessary existence; and therefore an objection like that of Gaunilo, drawn from the province of contingent existence, does not hold. It is an instance of what Aristotle denominates μετάβασις εἰς ἄλλω γένος— a transfer of what is true of one species to a species of totally different nature, as if one should transfer what is true of the idea of matter to the idea of mind."[1]

Refutation of Dr. Shedd

Here the good doctor precisely defines the logical error in Gaunilo's and similar objections. He transfers to *necessary* existence, says Dr. Shedd, an objection which holds good only in the sphere of *contingent* existence. Can this charge be sustained? Hardly. Let us recall to mind that Anselm does not begin with the datum of necessary existence, but only with the datum of a concept which involves the element of neces-

[1] "History of Christian Doctrine," I. 236, 237.

sary existence. The problem is to get from a necessity of thought to a necessary objective existence. By common consent, we have only a necessity of thought in the premises: can we reach a necessity of fact in the conclusion? Not unless we manage, unconsciously or willfully, to introduce an objective necessity of fact into the premises. This is what Dr. Shedd does, no doubt innocently, when he says that the "idea of the absolutely Perfect . . . contains the *element* of necessity of existence," and the "idea of God . . . does carry with it the *property* of necessary existence." By these words "element" and "property" our author has been misled. The elements of a concept are thought-elements, not objects or things. The properties of thought are mental, not elements of objective realities. If I think God, I must think him as necessarily existent. But since the concept is itself in the mind, all its "elements" must be there too. Anselm's argument, as Pro-

Element and Property

Sheldon's Statement

fessor Sheldon suggests, reduces to this: "The idea of God is the idea of the greatest conceivable being; to be in reality, as well as in conception, is greater than to be in conception alone; therefore the *idea* of God (as the greatest conceivable being) is the *idea* of a really existent being." [1]

Further Discussion of Principles Involved

It may be conceded to Dr. Shedd that there is a difference between that necessity of thought which must conceive a centaur as uniting the head of a man and the body of a horse, and that other necessity of thought which must conceive the sum of the angles of a triangle to be equal to two right angles. The first concept is a free creation of the imagination—its elements are contingent. As a conventional work of imagination, the concept might have been made to include elements it does not now possess, or might have been so constructed as to exclude elements now attaching to it.

[1] Dr. Henry C. Sheldon, "History of Christian Doctrine," I. 329.

The imagination itself has a freedom that does not belong to the intellect. But the product of imagination is subject to the same laws of thought as a real object. Certain conventional predicates having been assigned to the image, we may not deny it its marks, for that would be to violate the logical law of identity; we may not assign it contradictory predicates, for that would be to violate the logical law of non-contradiction; we may not deny that every possible predicate is either present in or absent from the image, for that would be to violate the law of excluded middle.

But in the case of the triangle, there is a necessity in the nature of the concept itself which makes the sum of its angles equal to two right angles. The concept of a triangle is a necessary product of thought, and not a free product of imagination. It is conceivable that the triangle might be called by some other name—*e. g.*, trilateral—but we should not thereby be able to eliminate any

of its mathematical elements or add any new ones. Now, to satisfy Dr. Shedd's critical distinction between "necessary existence" and "contingent existence," as he puts it (though the distinction should have been drawn between concepts including only contingent elements and those which involve necessary elements), it may be allowed that the concept of God falls in the same class with the concept of a triangle, and not in the same class with the concept of a centaur. If I conceive a triangle, I must conceive it as having angles whose sum is two right angles. That would be true if there were no actual triangle anywhere in the universe. This necessity of thought does not involve the necessary objective existence of any triangle. It affirms simply that, if a triangle is constructed, it will have this property. Similarly, if I conceive God, I must conceive him as necessarily existent. This would still be true if there were no God. It is as true for an atheist as it is for a theist.

Necessary and Contingent Existence

If I draw a circle, its radii must be equal. This is true, even if I draw no circle, or if it be impossible to construct a perfect circle—*i. e.*, if there is no circle. Once Dr. Shedd comes in sight of this truth, but quickly withdraws. "In conceiving, therefore, of a Being," says he, "who is *more perfect* than all others, the mind inevitably conceives of a real and not an imaginary being, in the same manner as in conceiving of a figure having three sides it inevitably conceives of a figure having three angles."[1] No doubt. In conceiving God the mind inevitably conceives of a real being. In conceiving trilateral the mind inevitably conceives triangular. But in both cases we begin and end with conception. The concept of God includes the element of necessary existence. But the elements of concepts are not objective entities, but marks or notes—*i. e.*, thought-elements, at best necessary thought-elements.

[1] "History of Christian Doctrine," I. 232.

Kant, Bowne, Lotze

Immanuel Kant promptly repudiated the ontological argument as an illogical leap from the subjective to the objective, from the ideal to the real. Anselm's reasoning is manifestly defective. He starts with thought, and must end with thought. The true conclusion is that God *must be thought* as actually existing, if thought at all. "There is not a shadow of cogency in this reasoning," says Professor Bowne, "it only points out that the idea of the perfect must include the idea of existence; but there is nothing to show that the self-consistent idea represents an objective reality."[1] "To conclude that because the notion of a most perfect being includes reality as one of its perfections," says Lotze, "therefore a most perfect being necessarily *exists*, is so obviously to conclude falsely that after Kant's incisive refutation any attempt to defend such reasoning would be useless."[2]

[1] Professor Borden P. Bowne, "Philosophy of Theism," p. 43.

[2] Hermann Lotze, "Mikrokosmus," Book IX., Chap.

IV. English translation, II. 669, 670. For the sake of his own reputation, it had been hoped that Dr. Shedd, before his death, would withdraw his commentary on Anselm's argument from his really able work. Of course everybody is liable to mistake, but that a foremost American theologian should commit himself to the formal defense of a logical absurdity, and allow the defense to stand for years, is too bad. Professor Robert Flint, of the University of Edinburgh, in his "Theism," pp. 278–280, with considerable hesitation advances positions substantially identical with Dr. Shedd's. He allows, however, that Anselm's argument "has commended itself completely to few," but alleges that "it may fairly be doubted whether it has been conclusively refuted." Kant's objection that existence is not a predicate or quality—*i. e.*, does not enlarge the intension of a concept—Dr. Flint views as "*perhaps* not incapable of being satisfactorily repelled." By these and similar equivocal expressions he always leaves open a door of escape. From the general drift of his article on "Theism" in the *Encyclopædia Britannica* (ninth edition), I conclude that he would now hardly undertake to maintain this indorsement of Anselm in his Baird Lecture of 1876.

CHAPTER IV

THE CARTESIAN ARGUMENT: MANKIND'S POSSESSION OF THE IDEA OF GOD

As a fitting transition to the peculiar features of the Cartesian agument the following passage from Lotze may be quoted. Anselm, despite the transparent absurdity of his argument, is so evidently groping after a profound truth that Lotze feels constrained in justice to add to the condemnation already cited this acknowledgment: "The way in which this is put seems to reveal another fundamental thought which is seeking for expression. For what would it matter if that which is thought as most perfect were, as thought, less than the least reality? Why should this thought disturb us? Plainly for this reason: that it is an immediate certainty that what is greatest, most beautiful, most worthy is not a mere thought, but must be a reality, because it would be intolerable to

Concessions of Lotze and Bowne

believe of our ideal that it is an idea produced by the action of thought, but having no existence, no power, and no validity in the world of reality. We do not from the perfection of that which is perfect immediately deduce its reality as a logical consequence; but without the circumlocution of a deduction we directly feel the impossibility of its nonexistence, and all semblance of syllogistic proof only serves to make more clear the directness of this certainty. . . . Many other attempts may be made to exhibit the internal necessity of this conviction as logically demonstrable; but all of them must fail." [1] This noble sentiment of the master finds an echo in the pages of his greatest American disciple: "The [ontological] argument is nothing but the expression of the æsthetic and ethical conviction that the true, the beautiful, and the good, which alone have value in the universe, cannot be foreign to the universe. The mind

[1] "Mikrokosmus," English Translation, II. 670.

will not consent to abandon its ideals. The ontological argument owes all its force to this immediate faith in the ideal. Its technical expression is due to the desire to give this faith a demonstrative logical form. The result is to weaken rather than strengthen it."[1]

Descartes's Argument not Identical with Anselm's

The Cartesian argument for the divine existence has often been identified with the Anselmic, but scarcely with justice to Descartes. It is true that one branch of Descartes's argument, or one of his arguments, if we separate his discussion into distinct logical processes, is identical with Anselm's. In the first part of his "Principles of Philosophy," it is presented in language so closely resembling Anselm's that it must be supposed to be derived from this source. No new thought is introduced, and the objections to Anselm's argument before adduced are also fatal to Descartes's, if con-

[1] Professor B. P. Bowne, "Philosophy of Theism," pp. 43, 44.

sidered independently of his other reasoning.[1]

[1] The original Latin edition of the "Principles of Philosophy," published in 1644, from which the French version was translated by Picot in 1647, is printed with side-notes like this volume—a very ancient typographical device. Paragraphs xiv. and xv. of the First Part, "De principiis cognitionis humanæ," have these marginal notes indicative of their contents: "Ex eo quod existentia necessaria, in nostro de Deo conceptu contineatur, recte concludi Deum existere," and "Non eodem modo in aliarum rerum conceptibus existentiam necessariam, sed contingentem duntaxat contineri." In the latter part of paragraph xiv., the parallel triangular argument is used exactly in the manner of Anselm and Dr. Shedd's reproduction of him: "Atque ex eo quod, exempli causa, percipiat in idea trianguli necessario contineri, tres ejus angulos æquales esse duobus rectis, plane sibi persuadet triangulum tres angulos habere æquales duobus rectis; ita ex eo solo, quod percipiat, existentiam necessariam et æternam in entis summe perfecti idea contineri, plane concludere debet, ens summe perfectum existere." Paragraph xv., which is short enough to be quoted in full, also reproduces Anselm: "Magisque hoc credet, si attendat nullius alterius rei ideam apud se inveniri, in qua eodem modo necessariam existentiam contineri animadvertat. Ex hoc enim intelliget, istam ideam entis

The Cartesian Argument Proper

In his third Meditation, Descartes presents his own argument, the Cartesian argument proper, whose validity we must now proceed to investigate. But, first of all, it will be worth while to allow Descartes to state his own position:

"By the nature of God I understand a substance infinite, independent, all-knowing, all-powerful, and by which I myself, and every other thing that exists, if any such there be, were created. But these properties are so great and excellent that the more attentively I consider them the less I feel persuaded that the idea I have of them owes its origin to myself alone. And thus it is absolutely necessary to conclude, from all that I have before said, that God exists: for though the idea of substance be in my mind owing to this, that I myself am a substance,

summe perfecti non esse a se effictam, nec exhibere chimæricam quandam, sed veram et immutabilem naturam, quæque non potest non existere, cum necessaria existentia in ea contineatur."—*Renati Descartes Principia Philosophiæ*, p. 4. (Ed. Amsterdam: 1685.)

I should not, however, have the idea of an infinite substance, seeing I am a finite being, unless it were given me by some substance in reality infinite. And I must not imagine that I do not apprehend the infinite by a true idea, but only by the negation of the finite, in the same way that I comprehend repose and darkness by the negation of motion and light: since, on the contrary, I clearly perceive that there is more reality in the infinite substance than in the finite, and therefore that in some way I possess the perception of the infinite before that of the finite—that is, the perception of God before that of myself, for how could I know that I doubt, desire, or that something is wanting to me, and that I am not wholly perfect, if I possessed no idea of a being more perfect than myself, by comparison of which I knew the deficiencies of my nature."[1]

[1] The original Latin runs: "Dei nomine intelligo substantiam quandam infinitam, independentem, summe intelligentem, summe potentem, et a qua tum ego ipse tum aliud omne, si quid aliud extat, quodcumque extat

Here is a new argument, altogether dis-

est creatum. Quæ sane omnia talia sunt, ut quo diligentius attendo, tanto minus a me solo profecta esse posse videantur. Ideoque ex antedictis Deum necessario existere est concludendum: nam quamvis substantiæ quidem idea in me sit ex hoc ipso quod sim substantia, non tamen id circo esset idea substantiæ infinitæ, cum sim finitus, nisi ab aliqua substantia quæ revera esset infinita, procederet. Nec putare debes me non percipere infinitum per veram ideam, sed tantum per negationem finiti, ut percipio quietem et tenebras per negationem motus et lucis; nam contra manifeste intelligo plus realitatis in substantia infinita quam in finita, ac proinde priorem quodammodo in me esse perceptionem infiniti quam finiti, hoc est Dei, quam mei ipsius: qua enim ratione intelligerem me dubitare, me cupere, hoc est, aliquid mihi de esse, et me non esse omnino perfectum, si nulla idea entis perfectioris in me esset, ex cujus comparatione defectus meos agnoscerem."—*Renati Descartes Meditationes de Prima Philosophia, In quibus Dei Existentia, et Animæ humanæ a corpore Distinctio, demonstrantur.* Meditatio III. "De Deo, quod existat," p. 21. I am fortunate in possessing a set of the original collected Latin edition of Descartes's works, printed at Amsterdam in 1685. The imprint is "Amstelodami, Ex Typographia Blaviana, M DC LXXXV." Descartes was born in 1596, and died in 1650.

tinct from the Anselmic. Man finds himself in possession of the concept of an infinite, eternal, self-existent, immutable, all-knowing, all-powerful, all-good Being. Whence did man secure the materials for this concept? Evidently neither from the analysis of his own nature nor from the contemplation of the objects of the external world, for these are finite, dependent, mutable—in a word, imperfect. What is the source of man's idea of the Infinite and the Perfect, in the light of which he clearly recognizes his own finitude and imperfection? Are we not compelled to acknowledge a true Infinite as the only possible source of this idea in us—the mark of the workman impressed upon his work, as Descartes himself suggests? If it be objected that the idea of the infinite is a merely negative one derived from the finite by its negation, as darkness is the absence of light, or cold the absence of heat, or silence the absence of sound, or rest the absence of motion, Des-

Source of Man's Knowledge of the Infinite and the Perfect

Idea of the Infinite not Negative

cartes has already anticipated and satisfactorily refuted the objector. Darkness and silence are nothings; but "I clearly perceive there is more reality in the infinite than in the finite." Perhaps no competent thinker of the present day holds that our notion of the infinite is negative.[1] Ueberweg allows that Descartes "justly denies that the idea of the infinite is a mere negation."[2] Ludwig Noiré, the distinguished author of that brilliant sketch of the history of philosophy which serves as an introduction to Max Müller's translation of Kant's "Critique of Pure Reason," concedes Descartes's point with regard to the idea of the infinite in language which logically carries with it a full acceptance of the conclusion of

Ueberweg

Noiré

[1] Some years after this sentence was written, I discovered that Professor Noah K. Davis, of the University of Virginia, is an exception. See his article "Infinity," in *The Methodist Review* for September, 1894, pp. 20–31.

[2] Dr. Friedrich Ueberweg, "History of Philosophy," II. 49, footnote.

Descartes's argument: "All serious thinkers, however, will agree," says he, "that the idea of Infinity is not negative, *that it cannot possibly be derived from any finite being*, not even by the action of sense and reason, which are in their nature conditioned, and that accordingly *the sources of the conception must be without and beyond the limits of rational knowledge.*"[1]

Soundness of Descartes's Position

The soundness of Descartes's position has commended itself to writers widely separated in their philosophical views and methods. To the names of Ueberweg and Noiré may be added those of a few other men of like exact and extensive erudition and of acknowledged philosophical competency. Dr. Calderwood, quoting from Professor Veitch's translation of Descartes's third Meditation a part of the passage already cited, says: "Even if the clearness of our thought of God be no argument to

Calderwood

[1] Max Müller's translation of Kant's "Critique of Pure Reason," *Introduction*, I. 132.

the reality of the divine existence, still the idea remains as a fact to be accounted for. I can explain, by simple combination of the attributes of different beings, how the idea of a centaur has been formed. But how shall we account for the idea of God within us? How has this conception been formed? Descartes has a strong position here."[1] Ralph Cudworth, the Cambridge Platonist, definitely accepts the Cartesian conclusion: "We affirm that, if there were no God, the idea of an absolutely or infinitely perfect being could never have been made or feigned, neither by politicians,

Cudworth

[1] "Moral Philosophy," ninth ed., p. 227. This passage stood in all editions to the thirteenth, but, with the whole discussion connected with it, has been withdrawn from the almost entirely rewritten fourteenth edition, evidently, however, from change of treatment and not from change of conviction. Speaking of the Cartesian position, he says, at p. 324 of the fourteenth edition: "Next to his own being, the existence of God is the grand certainty, for as doubt implies imperfection, the human mind cannot be the source of the idea of an absolutely perfect being."

nor by poets nor philosophers, nor any other."[1] Leibnitz's position is well known. Leibnitz "I believe, indeed, with Mr. Locke," he says, "that, properly speaking, we may say that there is no space, time, nor number which is infinite, but that it is only true that however great may be a space, a time, or a number, there is always another greater than it without end; and that thus the true infinite is not found in a whole composed of parts. It is none the less, however, found elsewhere; namely, in the *absolute*, which is without parts. . . . The *positive infinite*, then, being nothing else than the absolute,

[1] "Intellectual System of the Universe," Chap. v. One of Cudworth's own *a priori* demonstrations is reduced, in Lowrey's "Philosophy of Cudworth," p. 107, to this form: "Whatever we can frame an idea of in our minds, implying no manner of contradiction, this either actually *is*, or else, if it be not, it is possible for it to be; if God be not, he is not possible hereafter to be; *ergo*, he *is*." Those fond of investigating logical word-juggles may amuse themselves with this. The argument Cudworth allows is convincing only "according to the capacity of the recipient."

it may be said that there is in this sense a positive idea of the infinite, and that it is anterior to that of the finite."[1] The testimony of Kuno Fischer, a specialist in the critical investigation and exposition of Cartesianism, will be considered at length at a later stage of the discussion.

Descartes's Doctrine

But from this digression among authorities of learning and weight, I must return to Descartes himself for a closer and more exact consideration of his teaching. In the "Discourse on Method," as well as in the "Meditations" (III. and V.), the fundamental place of this doctrine among the first principles of Cartesianism is definitely and elaborately set forth.[2] The "Discourse on Method," published in French in 1637,

The "Discourse on Method"

[1] A fragment of the year 1696 on Locke's Essay, translated from the French by Langley and prefixed to his English version of Leibnitz's *Nouveaux Essais sur l'Entendement Humain*. Compare Book II., Chapter xvii., of that work; pp. 161–164 of Langley's translation.

[2] Descartes's exposition of his proofs of the divine existence may also be found in the "Principles," Part

when Descartes was forty-one years old, is at once the intellectual autobiography and the philosophical confession of faith of the founder of modern philosophy and the mathematical precursor of Newton and Leibnitz. As such it is a spring of perennial interest. His design was not to teach others the precepts for the right conduct of their reason, but to describe the way in which he had consciously striven to conduct his own in the search after truth.[1] His tract

I., paragraphs xiv.–xxii., partially cited in a preceding footnote (p. 33), and in the "Responsio ad Secundas Objectiones," as annexed to the "Meditations," under the title "Rationes Dei existentiam probantes more Geometrico dispositæ." But in these cases the order of statement is reversed, and the ontological argument is thrust into the foreground.

[1] Ne quis igitur putet me hic traditurum aliquam methodum, quam unusquisque sequi debeat ad recte regendam rationem; illam enim tantum quam ipsemet sequutus sum exponere decrevi.—*Dissertatio de Methodo*, etc., p. 2 (Amsterdam ed., 1685). The Latin translation was made by Etienne de Courcelles in 1644 under the supervision of Descartes, and thus has the character of a second and revised edition. See Descartes's prefatory note to the reader.

was put forth as a history of the intellectual processes by which he had reached such noteworthy results in physics, mathematics, and philosophy. He had been led to declare that a plurality of suffrages is no criterion of truth, if that truth is at all difficult of discovery; since such truth is much more likely to be found by one than by many.[1]

Part iv

Part iv. of this Dissertation its author entitles, "Reasons by which the existence of God and of the human soul is proved, which are the foundations of metaphysics"—*Rationes quibus existentia Dei et animæ humanæ probatur, quæ sunt Metaphysicæ fundamenta.*[2] Its comparative brevity adapts it more readily to my present purpose than the more elaborate "Meditations." In this fourth part, Descartes describes and ex-

[1] Ac denique advertebam circa ea quorum veritas non valde facile investigatur, nulli rei esse minus credendum quam multitudini suffragiorum; longe enim verisimilius est unum aliquem illa invenire potuisse, quam multos.—*Diss. de Methodo*, p. 10.

[2] *Ibid.*, p. 20.

plains, in the most naïve and charming way imaginable, the intellectual considerations and processes which led him to the four first principles of his philosophy: (1) the certainty of his personal existence as a thinking subject; (2) the nature of the mind, whose whole essence consists only in thinking,[1] and which is altogether distinct from the body; (3) what is essential to the truth and certainty of a proposition as revealed in the grounds on which he held one, at least—the *cogito ergo sum*—to be true; and (4) how he derived from the consciousness of his own imperfection and dependence the conclusion that there must exist a Perfect Being upon whom he was dependent and

The Four Principles of Cartesianism

[1] That Descartes employed "thinking" in the most comprehensive sense as equivalent to consciousness, including intellect, feeling, and will, is evident from a remark at the beginning of the Third Meditation: "Ego sum res cogitans, id est dubitans, affirmans, negans, pauca intelligens, multa ignorans, volens, nolens, imaginans etiam et sentiens."—*Meditationes de Prima Philosophia*, p. 15.

from whom he received all that he possessed.

The Greatness of Descartes

Of these four fundamentals of Descartes's metaphysics, three may be described as *real*, one as *formal*. Three—the first, the second, and the fourth—lead us to real existences and their nature. One, the third, is an initial attempt to define a criterion of truth—the criterion of clearness and distinctness in the conception—which has since been enlarged and improved, notably by Leibnitz. The greatness of Descartes appears, in part, in this, that his three *real* conclusions, concerning the existence and nature of two spiritual *realities*, God and the human soul, more especially the latter, have sunk so deep and spread so wide in the popular intelligence of modern times that to the "common people" they appear self-evident.[1] Men of our day spontaneous-

[1] So Schwegler in his "History of Philosophy": "Descartes first proposed the principle of self-consciousness, of the pure, self-subsistent ego, or the con-

ly allow the reality of the human soul as a spiritual existence wholly distinct from the body, to which they also annex the property of immortality, another thought whose validity Descartes asserted. With equal generality and spontaneity modern unsophisticated men concede or assume the existence of God. Philosophically these truths, in most intimate connection and dependence —for in the certainty of my knowledge of a dependent and imperfect self, which nevertheless possesses the conception of the Perfect Being, the certainty of my knowledge of God has its roots—were first systematically expounded (*demonstrabantur*, he would say) by René Descartes, and to him and his successors, who wrought on his platform, are largely due their universal comprehension and acceptance in the modern

---

ception of mind, thinking substance, as individual self, as a singular ego—a new principle, a conception unknown to antiquity." See Stirling's translation, p. 163. Compare Seelye's translation, p. 207.

world. Especially is this true, as I have said, of the Cartesian teaching concerning the philosophically valid independent and spiritual existence of the human soul and its essential nature as a conscious or thinking being. Every minister of religion who ascends a pulpit may assume that the "common people" before him, the men and women of unsophisticated intelligence, even though professedly irreligious, are immovable believers in God and their own souls. These, I say, are truths he may *assume;* truths he is not required to *prove.* When he enters upon processes of philosophical proof, he commonly weakens his position; for the popular conviction is at once profounder and clearer than the reasons that most men can allege on behalf of it. How largely this situation—particularly as to the reality and nature of the thinking mind and its distinctness from, and independence of, the body—is a debt which the world owes to Descartes, it would be difficult to compute.

Well does he deserve his universally conceded title and position as the founder of modern philosophy. If general and permanent acceptance is a guarantee of the cogency of proof—acceptance of the conclusion almost as self-evident, after the processes by which it was reached and the grounds upon which it stands are forgotten by all but special inquirers—then might Descartes, if he were alive to-day, be entitled to say of his position, *probatur*—it is proved. So intimately interwoven are these first principles of Cartesianism that I shall give a rapid outline of them—based, however, upon a first-hand study[1]—that the reader may receive a more vivid impression than historians of philosophy are wont to convey of the vital

[1] This chapter was written in 1887; but, while passing the volume through the press, I have been led to a fresh study of the works of Descartes, resulting in the accumulation of materials which could not be completely embodied in the text without recasting the entire treatment. These results I shall hope to present in an independent study of Cartesianism.

position of theism in the philosophy of Descartes.

Universal Doubt

1. Our philosopher became convinced that he ought to reject as absolutely false all opinions which he could discover the least reason to doubt;[1] that he might ascertain whether anything remained after this process that was altogether indubitable.[2] (1) Since our senses sometimes deceive us, he was willing to allow that nothing existed in reality corresponding to their presentations.[3] This position is further supported by the consideration that our apparent presentations in dreams are often as vivid as when we are awake; yet is there

[1] Illa omnia in quibus vel minimam dubitandi rationem possem reperire, tanquam aperte falsa esse rejicienda.—*Diss. de Methodo*, p. 20.

[2] Ut experirer an illis ita rejectis, nihil præterea superesset de quo dubitare plane non possem.—*Ibid.*, p. 20.

[3] Sic quia nonnunquam sensus nostri nos fallunt, quidquid unquam ab illis hauseram inter falsa numeravi.—*Ibid.*, p. 20.

no corresponding reality. And (2) because some men err in reasoning, and fall into paralogisms *(ac paralogismos admittere)* even in easy geometrical demonstrations, Descartes, modestly allowing that he was as exposed to rational error as others, decided to reject as false all the reasonings he had hitherto accepted as demonstrations.[1] Thus the senses and the reason were alike put to shame—ruled out of court as incompetent witnesses to truth. "But," continues Descartes, "immediately on this I observed that I, while thus rejecting all other things as false, found it absolutely impossible to doubt that I myself meantime existed; and as I was pondering that the truth of this proposition, *I think, therefore I am or exist*, was so certain and of such evidence that no ground of doubt, however extravagant, could be framed by the skeptics on which

The First Principle of Philosophy

[1] Illas etiam rationes omnes, quas antea pro demonstrationibus habueram, tanquam falsas rejeci.—*Diss. de Methodo*, p. 20.

that truth might be impugned, I believed that I might safely accept it as the first principle of philosophy for which I was searching."[1]

Ego cogito ergo sum

Thus, though both the evidences of the senses and the principles of the reason might be skeptically rejected—the first as variable, and therefore sometimes, at least, deceptive, and the second as leading men, even with full conviction of truth, astray—there remained a single truth, "*Ego cogito ergo sum*," thoroughly, certainly, and immediately known, which it was utterly impossible to doubt, since it was dependent neither on the variable senses nor on the fallible reason.

[1] Sed statim postea animadverti, me, quia cætera omnia ut falsa sic rejiciebam, dubitare plane non posse quin ego ipse interim essem: Et quia videbam veritatem hujus pronunciati, Ego cogito, ergo sum sive existo, adeo certam esse atque evidentem, ut nulla tam enormis dubitandi causa a Scepticis fingi possit, a qua illa non eximatur, credidi me tuto illam posse, ut primum ejus, quam quærebam, Philosophiæ fundamentum admittere.—*Diss. de Methodo*, pp. 20, 21.

Thus Descartes did not, like the skeptics, doubt for the sake of doubt, but methodically and purposively for the sake of knowledge. Anselm, as the representative of scholastic faith, might with propriety and force declare, *Credo ut intelligam;* and Abelard, as the apostle of a haughty and self-sufficient rationalism, might proclaim, *Intelligo ut credam;* but Descartes, as the representative of modest but free philosophical inquiry, could add with equal right and pertinency, *Dubito ut intelligam*. The truth thus reached became the first principle of Cartesianism and the beginning of modern philosophy.

The Mind Distinct from the Body

2. Next Descartes began attentively to examine *what he was*, and observed that he was able to conceive that he might be destitute of a body, and likewise that no extended and external world existed, nor even a place in which he should be. At the same time, he could not on these grounds be brought to the conclusion that he did not exist; but contrariwise, from the very fact

itself that he could regard all other things as nonexistent without affecting his own being, it manifestly followed that as long as he could only think—*i. e.*, be conscious—he continued to be. And, on the other hand, if only for a moment of time he should cease to think, although in the meantime both his own body and the extended world, and all other things which he had ever imagined, should be really existent, there would be no reason why he should believe that he existed during that moment of time. "Thereupon I concluded," says Descartes, "that I was a certain existence or substance, whose whole nature or essence consists only in this, that I should think, and which, that it may exist, has need of no place, nor is dependent upon any material or corporeal thing. So that I, that is the mind, through which alone I am what I am," he concludes, "is an existence wholly distinct from the body, and even more easily known than the body, which would still continue to be the

same that it now is, although the body should no longer exist."[1]

In a word, the nonexistence of the body and of the world—whose existence Descartes found himself capable of doubting—did not involve the nonexistence of the mind, whose reality consisted in the processes of thought—*dubitans*, *affirmans*, *negans*, *intelligens*, *ignorans*, *volens*, *nolens*, *imaginans*, *sentiens*—of which he was immediately conscious;[2] while the cessation of con-

[1] Inde intellexi me esse rem quandam sive substantiam, cujus tota natura sive essentia in eo tantum consistit ut cogitem, quæque ut existat, nec loco ullo indiget, nec ab ulla re materiali sive corporea dependet. Adeo ut Ego, hoc est, mens per quam solam sum is qui sum, sit res a corpore plane distincta, atque etiam cognitu facilior quam corpus, et quæ plane eadem, quæ nunc est, esse posset, quamvis illud non existeret.—*Diss. de Methodo*, p. 21.

[2] That "to think" and "to be conscious" are exactly equivalent with Descartes appears further in a passage from the "Principles of Philosophy," Part I., paragraph ix.: "Cogitationis nomine intelligo illa omnia, quæ nobis conciis in nobis fiunt, quatenus eorum in nobis

scious thinking, even for a solitary instant, during which the body and the world and all other material things might be conceived as existing objectively and really, would leave him no reason to believe that the mind itself existed. Whence follows the conclusion as to the nature of the mind which I have translated in the text, inserting the Latin in the footnote.

The Criterion of Truth

3. After this Descartes inquired in general what is necessary that the truth and certainty of a proposition may be known: for, since he had now discovered one which he knew to be true, he thought he must thence be able to perceive, also, in what this certitude consisted. And as he remarked that nothing whatever is contained in the words "*Ego cogito ergo sum*" which could render him certain of their truth, except that he saw most manifestly that it was

conscientia est: atque ita non modo intelligere, velle, imaginari, sed etiam sentire, idem est hic quod cogitare." (Ed. Amsterdam: 1685, p. 2.)

impossible that one should think who did not also exist, he believed that he might assume as a general rule *(pro regula generali)* that everything which he very clearly and distinctly *(dilucide et distincte)* conceived was true. Thus, whatever the reason recognizes as true with the same irresistible conviction as the "*cogito ergo sum*" may be safely accepted.

The Divine Existence

4. Descartes now observed that since he doubted many things, he must thence infer that his own nature was not at all perfect; for he very clearly recognized the truth that *doubt* is no such ground or mark of perfection as *knowledge*. And when he was led to inquire further, whence he had it that he should think of a nature more perfect than his own, he clearly saw that he could not have this idea except from a being whose nature was in reality more perfect.[1] In re-

[1] Clarissime etiam intellexi me hoc habere non posse, nisi ab eo cujus Natura esset revera perfectior.—*Diss. de Methodo*, p. 21.

gard to sky, earth, light, heat, and a thousand other external objects, if these did in reality exist, he could discover in them nothing superior to his own nature; of which he could accordingly regard them as possible dependencies so far as it possessed a certain perfection. Or, if his impressions of external objects were illusory, then they proceeded from nothing. "But not thus could I judge," he continues, "concerning the thought or Idea of a Nature more perfect than my own. For that I should receive this idea from nothing was evidently impossible. And because it is not more reasonable that the more perfect should proceed from the less perfect than that something should come from nothing, I could not conclude that I derived this idea from myself: accordingly it only remained that this idea had been placed in me by a being whose nature was more perfect; which also, indeed, contained in itself all perfections of which I could frame any

conception; that is, in a word, which was God."[1]

And to this argument for the reality of God as the only sufficient source of the idea of a greater perfection than his own which he found that he possessed, Descartes added that, since he thus knew some perfections which he did not possess, he could not be the only being in existence, even though the "*cogito ergo sum*" did not of itself carry him further than a naked solipsism. On the contrary, there necessarily existed another Being more perfect than himself, upon whom he was dependent, and from whom he had re-

[1] Sed non idem judicare poteram de cogitatione, sive Idea Naturæ quæ perfectior erat quam mea. Nam fieri plane non poterat ut illam a nihilo accepissem. Et quia non magis potest id quod perfectius est, a minus perfecto procedere, quam ex nihilo aliquid fieri, non poteram etiam a me ipso illam habere; ac proinde supererat ut in me posita esset a re, cujus natura esset perfectior; imo etiam quæ omnes in se contineret perfectiones, quarum Ideam aliquam in me haberem; hoc est, ut verbo absolvam, quæ Deus esset.—*Diss. de Methodo*, p. 22.

ceived all that he possessed *(a quo penderem, et a quo quidquid in me erat accepissem)*.

Analysis of the Argument

It is evident, on analysis, that Descartes here reaches the divine existence by a twofold process: (1) the reality of the divine existence is the only sufficient explanation of man's possession of the notion of God; and (2) since man recognizes his own finitude, dependence, and imperfection, he cannot have his existence from himself, or from the material world, which he clearly knows as inferior to himself, but only from that Infinite, Independent, and Perfect Being, the conception of whom illuminating his own heart enables him to see his own finiteness, dependence, and lack of perfection. These two processes combined may be called the *anthropological* argument—I find the term in Kuno Fischer.

Descartes's Use of the Ontological Argument

Having apparently completed his argument, Descartes unexpectedly returns later to the subject of the divine existence with

the baldest statement of the ontological argument. "Recurring to the examination of the idea of a Perfect Being which I possess," he says, "I immediately saw that the existence of this Being was contained in the idea in exactly the same way in which the equality of its three angles to two right angles is comprised in the idea of a triangle, or as in the idea of a circle the equal distance of all points of the circumference from its center; or even still more evidently; and that in consequence it is at least as certain that God, who is this Perfect Being, exists, as any geometrical demonstration can be."[1]

Correctness of the Threefold Analysis

The correctness of this threefold analysis of the Cartesian argument is expressly confirmed by the philosopher's own classification in another place. When Descartes prepared the "Meditations," "*in quibus Dei*

[1] Ac proinde ad minimum æque certum esse Deum, qui est illud ens perfectum, existere, quam ulla Geometrica demonstratio esse potest.—*Diss. de Methodo* p. 23.

Existentia et animæ humanæ a corpore Distinctio demonstrantur," he subjoined sundry objections of learned men to these demonstrations of God and the soul, which he purposely secured that the replies of the author might appear simultaneously with them.[1] At the close of the "Responsio ad Secundas Objectiones," Descartes introduces a short treatise under the title "Reasons, proving the Existence of God and the distinction of the soul from the body, displayed after the manner of Geometry."[2] After enumerating definitions, postulates, and axioms, Descartes gives under three separately formulated propositions his three distinct demonstrations of the divine existence. The first proposition is that the divine existence is known from the sole consideration of his nature—the ontological argument; the sec-

[1] See title-page of the Amsterdam edition.

[2] Rationes, Dei Existentiam et animæ a corpore distinctionem, probantes, more Geometrico dispositæ.—*Meditationes*, p. 85.

cond, that the divine existence is demonstrated *a posteriori* from our possession of the idea of God; and the third, that God's existence is evident from the fact that we ourselves exist as finite and dependent beings, yet in possession of this idea of the Perfect.[1] If we give to each of these arguments a name, the first is clearly *ontological*, the second *anthropological*, and the third is an anthropological variety of the *cosmological*, based upon the existence of *man*, whose finitude, dependence, and imperfection are immediately recognized, instead of on the existence of the external world, concerning which it is possible to entertain a doubt.

Descartes's Use of the Ontological Argument

The question now arises as to a possible explanation or vindication of Descartes's employment of the ontological argument—of which his anthropological argument in its two branches, it should be carefully observed, is entirely independent. As already intimated, both in the "Principles" (see

[1] *Meditationes*, pp. 89, 90.

above, pp. 42, 43, footnote) and in this geometrical arrangement of proofs, the ontological argument stands first and in apparent self-sufficiency and independence. In that case, it must certainly be rejected as invalid. But in the "Meditations" and in the "Discourse," it stands last, as if subordinated to the preceding anthropological argumentation—though, also, as we have seen, somewhat isolated. This fact has suggested to Kuno Fischer a possible defense of even this employment of the ontological argument; and before Fischer, Erdmann had said, "As Descartes here and elsewhere always [?] places his deduction from what is contained in the idea of God side by side with that drawn from its necessary presence in us, it almost seems as if he intended the reader to combine the two, and say that the existence of God is certain, because God himself testifies to himself within us and demonstrates his existence."[1]

[1] J. E. Erdmann, "History of Philosophy," II. 15.

And Weber goes—indefensibly, as I think—beyond this when he adds the remark, "In reality, the ontological argument [rooted, I suppose, he means in the *anthropological*] is no more of an inference than the *cogito ergo sum*. It is an axiom, a truth which the soul perceives immediately and prior to all reflection." [1] Erdmann's remark amounts to this, that if the idea of the Perfect One is not arbitrarily or independently framed by man, but on examination proves to be God-given—"God himself testifying to himself"—then from the divinely originated or delivered idea it is legitimate to deduce the reality and necessity of the divine existence—*i. e.*, the ontological argument, if rightly grounded in the anthropological, is good.

Fischer's Analysis of the Cartesian Argument

Let us examine, finally, the Cartesian argument, in all its branches, with the help of Fischer, the latest and most elaborate of its professed expositors. Professor Kuno

[1] Alfred Weber, "History of Philosophy," p. 311, footnote.

Fischer, of Heidelberg, perhaps the most eminent of contemporary German lecturers on the history of modern philosophy, has, indeed, given us the most exhaustive and critical history of Descartes and his school that has yet appeared. Says Fischer: "The ontological proof of Descartes is fundamentally different from the scholastic one, in spite of its parallelism with it. This difference is so important that the usual failure to observe it is equivalent to a complete lack of insight into the system of our philosopher."[2] The proposition Descartes sets out to prove, as we have seen, is that *God is the only sufficient source or cause of the idea of God—i. e.*, the Infinite and the Perfect. Such an aim is widely removed from Anselm's view that God's existence is demonstrable *a priori* from the elements of our thought of him. According to Descartes, as from

[2] "Descartes and His School," p. 350, under the caption, "The Anthropological Proof as Foundation of the Ontological."

"*cogito*," "*sum*" directly follows, so from "*Deus cogitatur*," "*Deus est*" is an immediate inference. It is true that Anselm's position might be represented by the same language; but Descartes means something totally different: if God is thought by us, God has given the thought; if God is the only sufficient source of the thought, God is. It is an argument from effect back to cause: this unique effect, the idea of the Infinite and the Perfect, demands a unique cause—nothing less than the Infinite and Perfect One will suffice for it. The proposition, "*Deus cogitatur, ergo Deus est*," is regarded by Descartes as equally certain with his fundamental truth, "*Cogito ergo sum*," the *fons et origo* of our modern philosophy. Why this certainty? We shall let Kuno Fischer answer:

"We must, therefore, require as the first condition of an ontological proof, that the idea of God is not an arbitrary, but a necessary, thought, inseparably bound and united

with our nature. If this necessity cannot be grounded in the nature of man, the ontological proof, even in its starting point, is without foundation. From this it is evident that it requires to be *anthropologically* grounded and vindicated.

"But even when that first condition is fulfilled, we are yet far from the goal. . . . So long as the idea of God is only *my* conception, produced by my thought, however necessarily, so long is the existence of God also only my idea. . . . If the idea of God in me is to prove the existence of God, it must be more than merely my idea: it must not merely represent the existence of God, but in a certain sense be that *existence itself*. [Here Fischer's thought is closely parallel with Erdmann's, if it be not derived and elaborated from it.] Suppose that this idea which I have were the expression of God's own nature, his immediate effect, and proclaimed itself as such to me, then certainly, it would be a direct proof of the divine

existence. . . . As certain as I am of myself, so certain ought I to be that this idea is not my product, but the effect of God in me. This is the point which is now to be proved, upon which everything in Descartes's doctrine of God directly depends. If it can be proved that the idea of God in us (1) is necessary, and (2) cannot be our effect, the point in question is made out. It must be shown that an imperfect being such as we are cannot produce the conception of a perfect being. In any case, the knowledge of our own imperfection and weakness, therefore the investigation of our own nature, our self-examination, must be the first step on the way to the knowledge of God. But it is not merely the first step, but also the light on the way. This light, which Descartes's doctrine of God and its ontological argument alone imparts, is entirely wanting to the scholastic proof. In the latter the important matter is that we conceive a perfect being: in Descartes's

argument the important matter is that we conceive a perfection *which we ourselves do not have, and because we do not have it.* . . . In the '*cogito ergo sum*,' the mind was absorbed in itself, in a monologue as it were: it had turned from the consideration of outward things, and at first won no other certainty than that of its own existence. In the review of its ideas, *one* is discovered which excels all others; and the first glance, as it were, betrays its divine origin. While all other conceptions are ever repeating to the lonely thinker, 'Thou art, thou art, I am only a mirror of your nature, an effect of your power,' this alone proclaims to him, '*I am*, I reflect in thee another and far better nature than thine: I have not, therefore, sprung from thee, but from my archetype.' . . . This connection between '*cogito*' and '*Deus cogitatur*,' between the certainty of self and the certainty of God, is the point to be proved and illustrated, without which the doctrine of Descartes remains

misunderstood. . . . In order to discover the methodical progress from the certainty of self to the certainty of God, we must take the expression of the first, the '*cogito*' or the '*sum cogitans*,' exactly in the sense in which the philosopher conceives it and establishes it. His desire for truth requires self-examination, which results in the perception that we deceive ourselves in many instances, and, therefore, possibly in all; that we have no reason to regard any of our opinions as true; rather that we are in a state of universal uncertainty and completely destitute of the truth. . . . The Cartesian doubt is nothing else than the *certainty of this defect, of this our universal intellectual imperfection*. In one and the same act doubt reveals to us our thinking nature and our defective intelligence. . . . Not for nothing follows the '*cogito ergo sum*' immediately from the '*de omnibus dubito*.' *I am myself*, that being whose existence is immediately evident to me. *I am myself*, the being

of whose possession of truth I doubt absolutely, as to whose intellectual excellence I am completely puzzled."

The Vital Point

Now comes the vital point of the Cartesian argument: we both conceive a perfection which we do not possess, and we distinctly recognize ourselves as destitute of it. Fischer continues:

"*How does the idea of the imperfect arise?* How do we attain to the knowledge of our own imperfection? It is one thing *to be imperfect*, another *to know that we are*. In the one case, imperfection is a state in which I am involved; in the other, it is an object which I make clear to myself. This perception, at least, is not imperfect, but is as perfect as it is true. That I am involved in self-delusion is an undoubted proof of my defects. *That I break through its barriers and perceive my self-delusion is an undoubted proof of a perception present in me, without which I should continue in the darkness of delusion, and the idea of my*

imperfection would never occur to me. . . . There are no defects for idiots; either they find everything good, or they condemn without discrimination. Only the critic sees imperfections; they can be apprehended only in the light of the perfect, the light which illuminates that '*via eminentia*' on which man supposes he first finds the idea of the perfect. It is no wonder that he finds it since he had it already, and had to have it, when he perceived his own imperfection. . . . The relation is now reversed, and what seemed to be the inference is in truth the ground. From the idea of the perfect springs that of the imperfect; that is *more original* than this, therefore more original than the knowledge of our own imperfections, of our own thinking being. In our certainty of God our certainty of self has its roots. The idea of God is not merely one among others, but is the only one of its kind, because it is the source of all light. It is not merely as clear and evident as the conception

of our own being, but far clearer, because it first illuminates this conception. 'It is of all our ideas,' says Descartes, 'the clearest and most distinct, and therefore the truest.'" [1]

This is the distinctive Cartesian argument for the existence of God, in its anthropological and (subordinated) ontological elements, as clearly, acutely, and fully analyzed by Kuno Fischer. Every mind must appreciate its insight, its power, its cogency. The main argument is not ontological; it is nowhere based upon the abstract consideration of thought as thought—it is not an attempt after the manner of Anselm to pass by *a priori* analysis from thought to reality—but it rests upon the nature of a given thought as an *effect;* and even in its subordinate, ontological branch, if Erdmann and Fischer are correct in their interpretation, the deduction of necessity of existence is from a God-given and God-fixed idea, which man did not originate, and which he cannot

[1] Fischer, "Descartes and His School," pp. 351–358.

abolish or modify. It is therefore, in its main branch, an *a posteriori* argument, from effect to cause, and one of the weightiest of its class. For this reason it would be well if the epithet "ontological" could be dissociated from Descartes's leading theistic discussions, as everybody at once begins to suspect a snare when it is mentioned. The title at the head of this chapter indicates the true character of the principal Cartesian argument: it is based on "mankind's possession of the idea of God." It may as a whole be designated the *anthropological* argument; if it be separated into two branches, the first is purely anthropological, while the second is an anthropological use and application of what is generally styled *cosmological* reasoning, based on man's immediate consciousness of his finitude and dependence. (See above, pp. 60, 63.) If the ontological argument is admitted to legitimate standing, as a third branch of Cartesian theistic reasoning, it

The Argument a posteriori

can only be as subordinated to, and grounded in, the concrete anthropological argument.

What has Descartes Proved?

Descartes has proved beyond enlightened cavil, I think, that the idea of God, the Infinite and the Perfect, has come to man *ab extra*—from the Perfect One himself. The only question remaining is as to the manner of the insertion of this unique notion within the circle of mankind's experience. Shall we designate it an inward light of *reason*, or an immediate and original *revelation*, by which God has made himself known to his creature? Noiré puts the emphasis on the right point when he says that our notion of the Infinite "cannot possibly be derived from any finite being, not even by the action of sense and reason," and that this "conception must lie without and beyond the limits of *rational* knowledge." (See above, p. 39.) This language not inaptly describes the position of Descartes himself. By common consent, man cannot gather the idea of an infinitely perfect being from his knowledge of

his own nature or that of the finite and dependent existences which come within the range of his experience. But he undoubtedly possesses the notion of this perfect being, self-sufficient in the mode of his existence, and infinite in all his attributes of wisdom, power, and goodness. Since, then, experience and reason do not afford us the materials for constructing this notion, the conclusion is inevitable that the notion has been communicated to the race *ab extra*, and the only possible author of the communication is the Perfect One himself. If we distinguish between the *revelation* and the *record* of it, between man as the *recipient* of it, and the writings of man which are the *depository* of it, then may Descartes enjoy the distinction of having penetrated, on the human side, the secret of the fact and philosophy of God's primary and ordinary revelation of himself to man. *Revelation* is thus shown to be a rational necessity, to account for the intellectual riches of mankind

Revelation

and the prevalence of the knowledge of God among all peoples from the earliest times. Man may not kindle a bonfire on the earth which shall illuminate the heavens; but God may set his great lights in the skies which shall flood the earth with glory. These floods of glory can issue from but One Source. The origin of theism is thus by revelation, and its continuance in part historical and traditional.

We need to recognize that revelation has a human and philosophical side; its communications conforming to the mental constitution, the needs, and the capacities of the recipient. "If reason is not of itself capable of finding the highest truth," remarks Lotze, with a penetration remarkable even in his pages, "but on the contrary stands in need of a revelation which is either contained in some divine act of historic occurrence, *or is continually repeated in men's hearts*, still reason must be able to understand the revealed truth at least so far

Lotze

as to recognize in it the satisfying and convincing conclusion of those upward-soaring trains of thought which reason itself began, led by its own needs, but was not able to bring to an end."[1] As to the manner and process of this revelation—the philosophy of it—we may here content ourselves with a mere hint dropped by the same profound philosopher: "We can hardly picture to ourselves the workings of God upon the heart otherwise than after this pattern: we cannot imagine the recognition of any fact as something that can be simply communicated, something that reaches the mind ready made and without any activity on its part, we can only imagine that occasion can be given to the mind to, as it were, produce such recognition by exercising this activity, and in this it is that every appropriation of a truth must consist. As sense in itself furnishes merely an impression, so also this

[1] "Mikrokosmus," English translation, II. 660. I have italicized a few words.

divine influence would produce merely a feeling, a mood, a mode of affection; what is thus experienced becomes a revelation only through some work of reflection which analyzes its content and reduces it to coherence by clear notions that are capable of being combined with our ideas of the real world."[1] This task will be undertaken in later chapters concerning the only Sufficient Cause and the Divine Designer.[2]

[1] "Mikrokosmus," II. 662.

[2] The paraphrases and translations of Descartes in this chapter I have made directly from the Latin of the edition of 1685; perhaps, sometimes, with something less than elegance, as I have had little occasion for such work since my college days. This remark does not apply to the quotation on pp. 34, 35: I cannot recall whether I translated it myself while teaching, or, if it was borrowed, from what source it was taken.

CHAPTER V

THE HISTORICAL ARGUMENT: THE CONSENSUS GENTIUM

THE historical argument may be briefly and appropriately presented in immediate connection with the foregoing chapter. If the *consensus gentium*, the universal consent of the nations of the earth, may be claimed for any truth, it is for that of the being of God; if the same authority is a sufficient basis for any human institutions whatever, the institutions of worship and religion repose securely upon this foundation. As a matter of fact, notorious in the annals of mankind, the knowledge of God has been universal as to both space and time—*i. e.*, among all peoples in every part of the world, and through all times from the beginning of history until the present, man has been a worshiper of deity. So vast is the volume of testimony to this point that, if here and there an ancient or modern traveler among the

The Consensus Gentium

debased races of Central Africa or Southern America thinks he has lighted upon tribes destitute of the notion of God and of even the rudimentary institutions of religion, we must for the present hold that his ignorance of their language and customs, coupled with the temerity with which temporary sojourners often pronounce summary judgments upon the habits, language, and social institutions of the peoples who entertain them, has misled him. Before accepting his conclusions, we must wait for more light. At the worst, perhaps such proofs would only establish greater possibilities of deterioration in humanity and closer approximations to animality and brutehood than had before been recognized. Closer acquaintance with such peoples, and the reconstruction of their history from such data as might be extant among them, might reveal from how great a height they had fallen. But, in such a survey as is here attempted, it is obvious this question cannot be discussed in detail.

Man a Religious Animal

Man, we may safely assume, is a religious animal. This is one of his distinguishing peculiarities. No one would be so foolish as to preach to a congregation of the most intelligent brutes of God, Love, and Duty. The effort, however earnest, perspicuous, and protracted, must result in failure. No response to these fundamental ideas of morality and religion could ever be awakened in the bosom of the lower animals. But missionaries do not hesitate to proclaim the whole circle of gospel truths, exalted and profound as they are, to the most ignorant and debased human tribes. They are always understood; and the gospel proves the power of God unto salvation to every one that believes. If the knowledge of God is not original and connate, but communicated, the capacity for God is. In this sense the grossest forms of fetichism, the absurdities of idolatry, and the intricacies and immoralities of polytheism, stand as witnesses for the being of God. Man,

as such, has a Godward tendency, a God-appetency—if this form of speech may be allowed—that must be satisfied by some religious cultus, with its object or objects of veneration and worship.

Argument from Instinct

Closely allied to this historical argument from the universality of religious worship is the argument from *instinct*. The doctrine, sought to be established in this treatise, of God's historical and ordinary revelation of himself to man, is not inconsistent with man's instinct of worship. Implanted instinct furnished originally, and still furnishes, the subjective tendency to, rather the necessity for, worship; while revelation, according to the varying capacities of the recipients, is, though often corrupted, the only adequate source of man's knowledge of the object of worship. Among enlightened peoples this instinctive tendency is supplemented by rational considerations, and among Christian nations by the authority of recorded revelation; but there seems to be no valid ground for discredit-

ing an original instinct at the basis of man's religious nature. The facts seem to demand it. If a definition of instinct be asked for, it may be given in these terms: Instinct is the source of a habit or practice universally characteristic of a species, (1) which has not been acquired by direct and external communication from other members of the species; (2) which answers a real need in the life of the individual or of the species; and (3) which is non-rational in its primal and impulsive exercise, though capable of rational vindication.

Instinct: Animal and Human

In the lower animals instinct is at a maximum, reason at a minimum; in man reason is at a maximum and instinct at a minimum. Though it may be ultimately established that reason sinks to *nil* in the lower animals, it is certain that instinct is present in man. The human infant has more things to learn by experience, which his rational nature enables him to interpret and to profit by, than the young of any other animal; yet his ex-

istence depends upon his prompt surrender of himself to the control of certain instincts. These human instincts are blind, not rational. They are a striving after the necessary, when the necessity of the supply is not made evident either by reason or experience, just as is the case with the lower animals. Instincts differ radically, therefore, from innate and intuitive truths, which are rationally self-evidencing. In claiming, therefore, as an original endowment of human nature the instinct of divine worship, it is not asserted that the knowledge of God is connate or intuitive. This treatise opened with arguments to the contrary, satisfactory at least to me. It is certain that man has not always been able to give to himself a rational account of his religious tendencies or to justify fully his worship of the divine. In the heart of the Christian civilization of the nineteenth century men and women, who undoubtedly believe themselves possessed of rather uncommon mental powers, are

rising up and declaring themselves adherents of the "gospel of dirt." Yet others look upon religion as a species of insanity, and would substitute for it that pretentious form of infidelity styled, by an abusive use of the term, "humanitarianism"; nevertheless, mankind at large continue to worship.

Instinct and Environment

In the case of the lower animals, or even of plants, there has never been found an instance in which an implanted instinct or a real necessity of animal or plant nature did not find an adequate supply in the external "environment," as the naturalists call it, in the actual constitution of things, as I prefer to say. Shall we say that man alone is deceived when he yields himself to the guidance of his highest and best instincts? Shall we say that the chick, impelled by blind instinct to pip the shell, has had provided for him that fruitful and beautiful external world in which he may grow and thrive and be happy; and that for man has been provided no answering reality when he in-

stinctively demands an object of supreme worship? "Are not ye of much more value than they?"

Will the wise people of this generation tolerate a fable if it illustrates important truth?

Fable of the Two Chicks

Two chicks were snugly housed in eggs that lay side by side beneath the warm feathers of the sheltering mother. The day for pipping had come. During three long weeks the embryonic life had been slowly but steadily unfolding itself in those darkened little chambers. Through the thin shell walls the chicks held a brief colloquy preparatory to the most important and critical exploit of their careers. One was an agnostic chick; the other a religious philosopher. Said the agnostic: "I feel an irresistible impulse to-day to pip my shell; I have inward assurances that light and air and food and liberty and fullness of life lie beyond these walls that inclose me; but experience teaches me nothing concerning

such things as light and air and food and liberty and fullness of life; moreover, they are incapable of rational demonstration; I cannot rationally renounce the guidance of experience and reason; so, on the whole, since I know nothing, I have concluded to do nothing; I shall not pip my shell to-day." Said the religious philosopher: "I, too, know nothing of the hereafter and the beyond; it seems all very strange that I should pip and break the shell that has been my only home; I do not understand this blind impulse that drives me to do a deed seemingly so irrational and suicidal; I cannot anticipate what is to come of it all, nor do I see how feet and wings and bill and eyes and ears are to come into play; but the inward prompting is resistless; I shall pip my shell to-day—here goes!"

A beautiful little chick fluttered out into light and life. The mother hen left her nest with her brood. When the house-

wife came to look after her fowls she found in the deserted nest a single egg. Curious, she cracked it with her thimble, and there lay before her the stiff, dead body of an unhatched bird. It was our agnostic chick.

CHAPTER VI

THE ARGUMENT FOR A FIRST CAUSE: ITS ALTERNATIVES CONSIDERED

THE cosmological argument for the being of God, or the argument based on the existence of the world as we know it,[1] may be

[1] It is evident that the Cartesian (anthropological) form of the cosmological argument, being based upon man's immediate consciousness of his finitude and dependence, his knowledge that he is not self-existent and that he began to be at a definite time, has a decided advantage over the common form of the argument, which must begin with proving that these propositions are true of the material world. To be sure Descartes's naïve assumption that his nature is superior to all material objects (see above, pp. 58, 60), and consequently could not be derived from such inferior sources—though this view is amply confirmed by the profoundest philosophical considerations of our times—might be summarily set aside by modern materialists, who build up body, nerves, and brain, with all their assigned functions of life, sensation, will, and reason, from the elements of external and extended matter. The Cartesian form of the argument, proceeding upon man's immediate consciousness of his personal and spiritual existence, with

formulated in a syllogism. Though it may seem a little stiff, or even pedantic, I venture, for the sake of clearness and precision, to reduce it to that form, as follows:

The Syllogism

Major Premise · Everything beginning to

---

its limitations and dependence, allies itself naturally and closely with an idealistic philosophy, if it does not actually demand it. Though I have been long convinced that to allow the substantial and independent existence of an extended and external world, apart from conscious and percipient minds, leads directly to materialism and atheism, if this view is consistently carried through to its conclusions; I am far from finding any difficulty in recognizing a true and universal objective reality, independent of the percipient in its origin and laws. Thus the ordinary cosmological argument is not invalidated but strengthened. Indeed, at a later stage in this treatise, I shall endeavor to show that this idealistic realism is one of the directest paths that lead to God, placing God, man, and the world in accessible and intelligible relations. In the text of this chapter, however, the more usual form of the cosmological argument is adhered to, in the common terms of its statement by natural realists, since I do not care, at this stage, to complicate the discussion by introducing distinctions which do not really affect the issue.

exist, and every change in a previously existing thing—*i. e.*, every event, whether an absolute commencement or a subsequent modification—must have a sufficient ground or antecedent cause.

Minor Premise: The universe as a whole did have a beginning in time, and as now constituted consists of a system of changes.

Conclusion: Therefore the universe must have a sufficient ground or antecedent cause.

This is an ordinary syllogism of the first mood of the first figure, and if the premises be established the conclusion must be granted. To the establishment of the premises I now proceed.

The Major Premise

The major premise rests upon, or rather is an expanded statement of, a first principle of reason, namely, the principle that every event must have a cause. The premise, therefore, possesses the strictest necessity and consequent universality. For it no proofs are necessary, since it is self-evident; for it no proofs are possible, since it

cannot be resolved into simpler or more satisfactory elements. I therefore pass at once to the establishment of the minor premise.

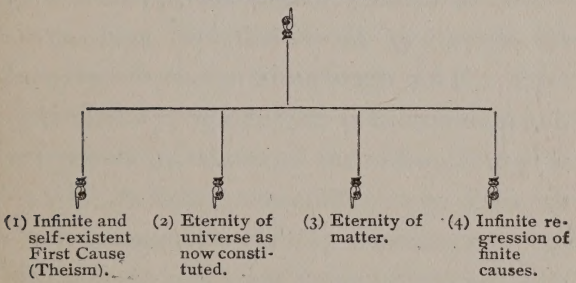
The Minor Premise

In the minor premise it is incumbent first of all to establish that *the universe did have a beginning in time*. If the universe did not have an absolute commencement, and is consequently self-existent[1] and not dependent upon any antecedent cause or extramundane being for its existence, one of

[1] The true antithesis is, of course, between self-existence and dependent existence, in which chronology and temporal sequence play no essential part. Creation, in its true idea, excludes (1) the self-existence of matter or the universe (materialism); and also (2) the notion that the world is a "necessary, involuntary, and inevitable development of the nature of God" (pantheism). The true theistic conception involves (1) the absolute and unceasing dependence of the world upon the deity; and (2) that this dependence is upon a Personal Will, in contradistinction to all notions of inevitable development or involuntary emanation. Compare Lotze on "The Conception of Creation," in his "Philosophy of Religion," Chap. v., pp. 70–80 (translated by Geo. T. Ladd).

three propositions must be true. Either (1) the universe as at present constituted must be conceded to be eternal; or (2) the eternity of matter must be acknowledged; or (3) the reality of an infinite regression of finite causes must be accepted. The state of the case may be represented by the following diagram:

The Logic of the Situation


The Existent Universe.
(1) Infinite and self-existent First Cause (Theism).
(2) Eternity of universe as now constituted.
(3) Eternity of matter.
(4) Infinite regression of finite causes.

If (2), (3), and (4) be disproved, by this process of exclusion, we shall have done much to place (1) on its proper basis—not to claim that we shall have done everything that tends to establish it. If, however, the material fallacy of incomplete disjunction has been avoided—*i. e.*, if the four preced-

ing cases are a complete enumeration of the possible alternatives—the disproof of (2), (3), and (4) is logically a sufficient establishment of (1), without further consideration of the positive evidences for (1). But abundant positive evidence for the truth of (1) exists—some of it already adduced, more of it yet to be presented.

I. Hypothesis of the Eternity of the Universe as Now Constituted

Let us examine, first, the hypothesis of *the eternity of the universe as now constituted*. This doctrine is not at the present day maintained by any competent authority. It is included in our investigation merely for the sake of scientific completeness. Geology can measure with approximate correctness the period since the earth assumed its present condition, and number and measure the previous conditions, annexing a history of each. The nebular hypothesis plausibly professes to be able to trace the genesis of the solar system itself, and, analogically, of other systems. Anthropology can date the appearance of man on the earth. In

short, all human sciences—geology, astronomy, anthropology, philology, and history—may be regarded as constituting a consensus, and agreeing that man has been upon the earth for a period possibly not exceeding eight or ten thousand years,[1] and that the globe has been continuously habitable and has supported its existing fauna and flora for a period not greatly exceeding this. Something like this length of time can be allowed by the chronology of the Bible, particularly by that of the Septuagint, or Greek translation of the Old Testament begun in Egypt under the early Ptolemies (third century, B.C.), which, as is well known, is considerably longer than that of

Consensus of All Sciences

Biblical Chronology

[1] Many authorities, it need scarcely be said, assign to man a much higher antiquity than this, the reducing of geological periods to terms of years being a rather precarious calculation. But all geologists place man in the latest of the great periods, Post-tertiary, or Quaternary; and within that period, after the Pleistocene or Glacial epoch, they take up the Recent or Human period.

the commonly received, or Masoretic, text of the Hebrew Bible.[1] But after all, the date of the commencement of the present state of things is wholly immaterial to the present issue. *A* commencement is allowed on all hands by every department of science, and *any* commencement is all that is essential to the argument. The hypothesis of the eternity of the various genera of animals and plants now occupying the

Unity of Science and the Bible

[1] No less an authority in anthropology than Professor E. B. Tylor hazards the conjecture that "as the Septuagint translation of the Bible was made at Alexandria, it is not impossible that its giving to man a considerably greater antiquity than that of the Hebrew text may have been due to the influence of the Egyptian chronology." This, however, is a needless supposition. Our oldest Hebrew MSS. date from a comparatively late period in the Christian era, being more recent than the oldest MSS., such as the Sinaitic and the Vatican, of the New Testament. The shorter chronology is almost certainly due to corruptions of the text, to which numbers are especially liable. The longer chronology of the Septuagint, translated, as it was, from MSS. much more ancient than any we now possess in Hebrew, is to be preferred.

earth cannot, therefore, be entertained for a moment. There is no infinite or eternal regression of the generations of mankind. Science and the Bible consent together. There was a *first* man.

II. Hypothesis of the Eternity of Matter

I pass now to the hypothesis of *the eternity of matter*. There seems to be a lingering notion in the minds of many scientific writers, as well as in those of other people, that there was originally some kind of primitive, undifferentiated, homogeneous world-stuff. This doctrine, which has descended to modern times from some of the earliest and least intelligent speculations of Greek philosophy, is a very crude one, for it assumes the existence of a first material (πρώτη ὕλη) possessing no particular qualities, or qualitatively *nil*, which stands to the various forms of matter very much as a tree stands to a bed, a box, a desk, or other article fashioned out of it. Out of this primitive, qualityless world-stuff the various forms of matter as we know it are

Primitive World-stuff

supposed to have been fashioned by a process of differentiation and increasing heterogeneity. Being *per se*, which is no sort of being in particular, but all being in general, is thus accepted as the taproot of the tree of the universe. A mythical product of long-ago exploded realism[1] lingers to befog the

[1] Realism, in its extreme Platonic form, taught that the genus has a positive existence antecedent to the individuals which compose it (*universalia ante rem*), the individuals participating in the numerically one and independent generic nature. Moderate, or Aristotelic, realism teaches that the genus has existence only in the individuals which compose it (*universalia in re*), maintaining, however, the numerical unity or identity of the generic essence, *e. g.*, humanity is a substance numerically one or identical in all men. Applying this doctrine to the highest generalization—the *summum genus*—namely, pure being, the doctrine of an actually existing undifferentiated world-stuff was reached as described in the text. Many physicists, destitute of philosophical training, entertain the doctrine in a crude and crass form. And perhaps it would not be difficult to prove that Herbert Spencer himself is not altogether clear of it. For further exposition and refutation of realism, see Tigert's "Logic," pp. 100–108.

intellects of speculators, or unconsciously to vitiate the results obtained by many thinkers who assume some such idea as this described above without stopping to clarify or establish it.[1]

Concession

It is conceded that no force known to man is capable either of annihilating matter or of calling it into being. As Anaxagoras announced nearly five hundred years before Christ, "Nothing can ever be said to become or depart, but each thing arises through

[1] In confirmation of this conclusion, set down many years ago, may be quoted an excellent book which has just come to hand: "Being, attenuated till it is altogether without attributes, substance, without any determination or characterization, force, or the persistence of force, gives no intelligible starting-point for the knowledge of reality. These are merely abstractions, easy to reach, and worthless when we have reached them."—P. 17 of "Theism in the Light of Present Science and Philosophy," by James Iverach, M.A., D.D. The fallacy of Spencer and others who reason in this way arises from mistaking merely mental abstraction for concrete analysis. Dr. Iverach's book is the inaugural course of lectures on the Charles F. Deems foundation at New York University.

the combination, and perishes through the disintegration, of preëxistent things; hence it is more correct to call becoming combination and departing separation." As far as science teaches, the sum of matter now in the universe cannot be increased or diminished. But science knows nothing of this primitive, undifferentiated world-stuff. On the contrary, it teaches that there are about sixty-six elements, or original, irreducible, and underivable constituents or forms of matter. Matter in the general, or that which is only matter, but not some particular form or kind of matter, is unknown to experience. Every atom of matter known to the physicist or chemist is either aluminium, bismuth, chlorine, fluorine, lead, mercury, nitrogen, silver, gold, sulphur, zinc, or some other element. So far as science tells us, all these must have been present in the primal firemist with which the nebular hypothesis begins the history of the solar and other cosmical systems.[1]

The Elements

[1] Here I am glad to find myself again supported by

The argument from this fact is as follows: If the material (materials) out of which the world is made is not some rough stuff, without any marks of intelligent design upon it, but on the contrary is a number of elementary substances, whose combination with, and action upon, each other is determined by many precise, complex, and stable laws, as exhibited in the multiplied formulæ of chemistry, then must these elements be de- The Argument

Dr. Iverach, though he declares that the most recent science "dreams of a preatomic state of matter"; on which he observes: "If there is a preatomic state of matter, it exists under other conditions than those which obtain on the earth, and our means of dissociation are too limited to enable us to reproduce that condition of matter. For us, atoms are ultimate and cannot be brought to a finer shape. This, also, has its bearing on the intelligibility of the world which is a postulate of theism. The original stuff is made with a bias, and has an invincible tendency to aggregate itself into certain irreversible patterns. Chemical elements are formed which maintain their identity and continuity in all circumstances, and no amount of work which we can bring to bear on them can break them up into simpler forms."—"Theism," etc., pp. 21, 22.

The Atom a Manufactured Article

scribed, in the words of an eminent scientist, Sir John Herschel, as "manufactured articles." Before them went a creating power and designing intelligence, which (who) stamped upon them the laws of their being. Observe: the teleological argument, or argument from design, is introduced at this point not to perform its own proper service (a use to which it will be put later), but to answer the negative purpose of disproving the eternity of matter. If the atom is a manufactured article, it has not existed from eternity, but is a product turned out by a manufacturer.[1]

[1] Professor J. Clerk Maxwell, after suggesting several meanings that may have been in the mind of Herschel when he styled the atoms "manufactured articles," says "it seems more probable that he meant to assert that a number of exactly similar things cannot be each of them eternal and self-existent, and must therefore have been made, and that he used the phrase 'manufactured article' to suggest the idea of their being made in great numbers." Professor Maxwell himself says: "Whether or not the conception of a multi-

Dr. Chalmers's Fatal Concession

Dr. Chalmers makes a fatal, but quite unnecessary, concession at this point: "We agree with Dr. Brown in thinking 'that matter as an unformed mass, existing without relation of parts, would not of itself have suggested the notion of a Creator.' . . . In the mere existence of an unshapen or unorganized mass we see nothing that indicates its non-eternity, or its derivation from an antecedent mind, while, on the other hand, even though nature should in-

---

tude of beings existing from all eternity is in itself self-contradictory, the conception becomes palpably absurd when we attribute a relation of quantitative equality to all these beings. We are then forced to look beyond them to some common cause or common origin to explain why this singular relation of equality exists, rather than any one of the infinite number of possible relations of inequality. Science is incompetent to reason upon the creation of matter itself out of nothing. We have reached the utmost limit of our thinking faculties when we have admitted that because matter cannot be eternal and self-existent, it must have been created."—See Maxwell's article, "Atom," in *Encyclopædia Britannica* (ninth ed.), III. 44.

cline to the thought that the matter of this earth and these heavens was from everlasting, there might be enough in the goodly distribution of its parts to warrant the conclusion that mind has been at work with this primeval matter, and at least fetched from it materials for the structure of many a wise and beneficent mechanism. It is well that revelation has resolved for us the else impracticable mystery and given us distinctly to understand that to the fiat of a great Eternal Spirit matter stands indebted for its existence and its laws, as for its numerous collocations of use and convenience. We hold that without a revealed theology we should not have known of the creation of matter out of nothing, but that by dint of a natural theology alone we might have inferred a God from the useful disposition of its parts. It is good to know what be the strong positions of an argument and to keep by them, taking up our intrenchments there, and willing to relinquish all that is untenable. . . .

For this purpose we would dissever the argument founded on the phenomenon of the mere existence of matter from the argument founded on the phenomenon of the relations between its parts. The one impresses the understanding just as differently from the other as a stone of random form lying upon the ground impresses the observer differently from a watch. The mere existence of matter in itself indicates nothing. They are its combinations and its organic structures which alone speak to us of a Divinity —just as it is not the clay, but the shape into which it has been molded, that announces the impress of a Designer's hand."[1]

Aristotle's Doctrine

Here again we meet with the old, fallacious conception of pure being, or of matter without form, an idea at least as old as Aristotle. Aristotle's four causes or principles are matter, form, efficient cause, and

[1] Dr. Thomas Chalmers, "Natural Theology," I. 117–119. American Edition. New York: Robert Carter. 1845.

end, which in the last analysis are reduced to matter (ὕλη) and form (εἶδος). Of this reduction some account will be given later, when the nature of the argument from design is reached. Within the realm of experience Aristotle recognized as important truth that every particular thing (οὐσία), every "this" (τόδε τι), is a totality or whole made up of matter and form—a σύνολον. But, while recognizing every particular existence of which men have knowledge as a combination of matter and form, Aristotle proceeded to construct a philosophical hierarchy of all existences. Of this hierarchy the lowest stage of being is a prime matter (πρώτη ὕλη) which is totally destitute of form, and the highest is form wholly separate from matter—the Absolute, Divine Spirit, designated variously in Aristotle's writings as πρῶτον εἶδος (first form), πρῶτον κινοῦν (prime mover, or source of energy), νόησις νοήσεως (thought of thought, or reason of reason), εἶδος εἴδους (form of form), etc. Form Aris-

totle identifies with actuality (ἐνέργεια), and matter with potentiality (δύναμις). Thus he works out an approximately correct and complete notion of God as a creative and intelligent Spirit, the only possible source and explanation of designed existence, of which every atom must be allowed to be an example, since it is a complex of matter and form. But the existence of pure matter without form is an unwarranted philosophical assumption, made simply for the sake of systematic completeness and having no basis in any fact of experience. Aristotle probably saw this plainly enough, and so identified this pure matter with mere potentiality, which is equivalent to Plato's not-being. But modern scientists are not generally gifted with Aristotelic insight, and so continually assume the existence of a primitive, formless matter, to which idea it seems certain there has never been any answering reality.

Upon the fallacy of Dr. Chalmers, Dr.

Dr. Summers's Reply

Summers beautifully and conclusively remarks: "There is only this difference between the 'stone of random form' and the human body, so 'fearfully and wonderfully made': the latter forces attention to its exquisite workmanship, while the former is liable to be overlooked; though, when subjected to chemical action in the laboratory, it is seen that 'this also cometh forth from the Lord of hosts, who is wonderful in counsel and excellent in working.' There is not an atom in the universe that does not discover the Creator's hand to the eye that is open to see it, as the shield of Pallas was so constructed by Phidias as to preserve the memory of the artificer as long as that wonderful work of art remained in existence."[1]

III. Hypothesis of Infinite Regress

Next in order I come to the hypothesis of the *infinite regress of finite causes.* This is sometimes allowed, though with slight war-

[1] "Systematic Theology," I. 65.

rant, to be the most powerful rival of the theistic doctrine. It is perhaps too readily conceded by Dr. Calderwood, for example, that nakedly and abstractly this hypothesis is logically thinkable. But his objections to its *reality* are powerful, if not conclusive. He says: "The regress of finite causes, each of which shall be adequate to account for the measure of existence previously recognized, is logically the nearest solution, and meets the first demands of a logical process, under the law of causality. To postulate a cause simply adequate to produce known existence satisfies the immediate claim of intelligence. Accordingly, the truth of the conclusion may be accepted merely as implying conformity with the laws of thought, though there be no means at command for verifying the supposition as to the existence of such a cause. . . . Still, what is thus accepted, logically, but only hypothetically, is not conclusive. The intellectual requirement which raised the first

Calderwood's Position

question now raises another as to the existence of this hypothetical cause, and so must continue as long as, in strict conformity with logical rule, only limited existence is postulated. In this line, therefore, there is no logical landing-place which can be conclusive, and no logical warrant for stopping. Besides, as the second stage in the process is only hypothetical, and there is no discovery of actual existence, by the contemplation of which we should have required to raise a fresh question, there is nothing better than a logical ground for procedure. As, then, it is impossible for us to continue the process to infinity, so it is impossible to rest in the belief that the history of existence has been progressively what the order of thought must be regressively. . . . If, to escape the discomfort arising from the want of any solution of the problem, we suggest an infinite regression of finite causes, the suggestion is not only gratuitous, but we raise a new problem. On what ground are

we to affirm infinity of existence? We have made an affirmation without trace of logical warrant. Our difficulties in carrying through an intellectual process bear witness to the limits of our thought, but provide no foundation for an hypothesis as to existence."[1]

The Infinite Regress Satisfies neither Observation nor Reason

In exposition of which, I may remark that human knowledge is divisible into three classes or sorts: (1) knowledge of first principles through rational intuition; (2) knowledge of matters of fact through lower or sense-intuition and self-consciousness; and (3) reasoned knowledge, or knowledge by inference. The materials for reasoning must be derived from knowledge of either the first or the second order: these orders of knowledge are not the results, but the prerequisites or foundations, of reasoning. Ordinarily, materials for strictly universal major premises are derived from the first order of knowledge; materials for minor prem-

[1] "Moral Philosophy," pp. 224–226.

ises from the second order. Reasoning may be formally correct but materially empty—as is the case with the reasoning in support of the infinite regress. If truths of the first and second order be put into the syllogistic hopper and the grinding be properly done, the grist secured will be the truth also—reasoned truth. But if the syllogistic mill be set in motion with an empty hopper, the running machinery may make a great noise, but the result of the grinding will be—*nothing*. It is a mistake to suppose that everything demands, or is even capable of, proof. I could adduce no argument to prove my bodily existence in this room where I am writing, or my personal existence as a thinking mind, that would compel any more cogent conviction of these facts than I have now from my immediate perception or consciousness of them. These are truths of the second order included in the sphere of sense-intuition and self-consciousness. Likewise, there are

truths of the first order—axioms, primary laws of thought, ethical intuitions—which do not simply require no proof, but are absolutely incapable of it. Without these data, furnished by the higher and the lower intuition, logical proofs are impossible. There cannot be an infinite sorites or an infinite chain of pro-syllogisms and epi-syllogisms: the logical chain must hang from staples driven fast in the hard facts of observation or in the adamant of the eternal and immutable nature of things. The "infinite regress" lacks both of these staples: it is not demanded or supported by either observation or reason, nor does it satisfy either, as will presently more fully appear.

Further Refutation

We have already seen how the traces of design in the constitution of the atom prove a preëxisting and intelligent designer. This consideration alone seems to shut off completely the notion of an infinite regression of unintelligent and impersonal causes; but it has also another application in this con-

nection. Design is evident, not only in the mutual adaptation of coexistent atoms, which enables them to enter into various unions with one another and to resist certain other combinations, but also *in the successions of cause and effect*. In fact, a *looking to the future* is by many philosophers regarded as the distinctive and indisputable mark of the presence of design. If then upon examination *we find in the series of causes and effects development and progress toward preconceived ends*, we may once more conclude the priority of intelligence. *Evolution* through cycles of time is proof of *temporally* dominant and persisting design—of foresight, of *providence;* as contemporaneous adaptations, and even *spatial* and mechanical harmonies, are proofs of intelligent power seizing and solving the problem and securing the result—as in the combining laws of the atoms.

Diman's Conclusive Statement

The late Professor Diman advances a conclusive argument at this point, clinching

it with the authority of Immanuel Kant: "What can be evolved from the idea of cause as it exists in our own minds? Does this idea demand finality, or is it satisfied with an endless series? In other words, does the same necessity of thought which requires us to believe in cause at all require us equally to believe in a *first cause?* The objector may urge: 'I hold to causation, but why must I believe in a first cause? What greater difficulties are there in an infinite succession of causes than in an original and self-existent cause? Both are absolutely incomprehensible; both raise difficulties which I cannot solve. But why compel me to choose one of these dilemmas rather than the other?' The objection at first sight seems plausible, but loses its force when we reflect that an infinite series does not make a cause, and cause is precisely what reason here demands. The real alternative does not lie between an infinite series and a first cause, but between accept-

ing a first cause or rejecting the idea of cause altogether. We are familiar enough with the notion of a proximate or secondary cause, and we may form the conception of an indefinite succession of real causes, yet all this does not satisfy our idea of cause. The only true cause is a first cause; when, therefore, the universe is thrown back upon an infinite succession there is a violation of the fundamental principle of reason. [We want a cause that is not also an effect, which is not true of any member of an imagined infinite series of finite causes.] For an infinite succession of causes rests, by the very hypothesis, upon no cause. Each particular cause rests indeed upon the next, but the whole rests on nothing. [A chain would not become self-supporting, or develop any tendency in that direction, by increasing the number of its links to infinity.] 'The reason,' says Kant, 'is forced to seek somewhere its resting point in the regress of the conditional. If something exists, it must be admit-

ted that something exists necessarily [and that which exists necessarily exists unconditionally, and is therefore independent and self-existent]; for the contingent exists only under the condition of another thing as its cause, up to a cause which exists not contingently.' Reason cannot stop short of this."[1] Hence by a double insufficiency the infinite regress is set aside, (1) its facts are imaginary; (2) if granted, they do not satisfy the demand of reason.

Agreement of Mr. Spencer

Similarly Mr. Herbert Spencer concludes that the First Cause must be "totally independent," having "no necessary relation to any other form of being," and "no necessary relation within itself." "The First Cause," says Mr. Spencer, "must be in every sense perfect, complete, total: including within itself all power, and transcending all law. Or, to use the established word, it must be absolute."[2]

[1] Diman's "Theistic Argument," pp. 84, 85.

[2] "First Principles," p. 38.

IV. Hypothesis of Self-existent First Cause

The only remaining alternative—of the possible explanations with which we set out—is that of an infinite, self-sufficient, and eternal First Cause, now reached positively by the preceding process of reasoning. But here we are met with the objection that we cannot argue logically from a finite effect to an infinite cause. We cannot postulate more in the cause than is required to produce the effect. Hence from a vast, but not illimitable or infinite, universe we can argue only to a powerful, but not to an omnipotent, God. Calderwood states this objection in its full force, and then advances to a criticism of Clarke (Dr. Samuel), which does not seem altogether just. "To begin as Clarke did," says Calderwood, "with the proposition that 'something has existed from eternity,' is virtually to propose an argument after having assumed what is to be proved."[1]

Metaphysical Objection

Calderwood's Criticism

It is unquestionable that something now

[1] "Moral Philosophy," p. 226.

exists—at least I myself, a finite and dependent being, exist. Now the human mind immediately rejects as a self-evident absurdity the proposition that this universe, or anything, could have originated from nothing. *Ex nihilo nihil fit. If there was ever a moment in all the past eternity when nothing whatever existed, then it is totally incomprehensible why anything ever began to be.* The fact that something is, therefore, is proof positive that something has always been, and Clarke was fully justified in beginning with the affirmation, "Something has existed from eternity."[1]

Reply

The objection we are now combating is refuted by a more careful statement of the cosmological argument, now rendered possible by the preceding discussion, as follows: Since something is, and that something is finite and dependent (eternity of matter or of the universe, and infinite re-

Corrected Statement of the Cosmological Argument

[1] "Demonstration of the Being and Attributes of God," p. 8.

gress of finite causes, being excluded by the preceding considerations), something must always have been, and that something, upon which all finite things depend, must itself be infinite and independent. This argument founds not upon the extent of existence, acknowledged to be finite, but upon the kind or nature of all existence known to experience — namely, its dependence. The infinite God is needed as much to explain the existence of an atom or of a dewdrop as he is to explain the existence of a sun or a system. I have already sufficiently shown that the infinite regress and the eternity of matter—either in its present form or as a sort of unformed, chaotic, first material—are excluded. If the notion of *force* is introduced, the materialistic argument is not helped. A conclusive paragraph from Calderwood on this point may close our survey of the cosmological argument: "The perplexity of the problem under a materialistic theory is not lessened, but increased,

Force and Matter

when duality of origin is assigned by introducing *force* in addition to *material substance*. Duality of existence, with coeternity of duration, involves perplexity sufficient to bar logical procedure [the perplexity of two absolutes or two eternals]. This duality of existence implies diversity of nature and mutual restriction; and these two, diversity and limitation, raise anew the problem which they were meant to solve [for an antecedent cause of this complex state of affairs must be found]. The explanation needs to be explained. Again, matter and force are postulated primarily to account for *motion*, but in accounting for motion *they are proved insufficient to account for existence*. That which needs to have force exerted upon it in order to be moved is not self-sufficient, and the same is true of the force which needs matter on which to exert its energy."[1]

In addition to the reasoning from the con-

[1] "Moral Philosophy," pp. 235, 236.

A Scientific Disproof of the Eternity of Matter

stitution of the atoms adduced above to disprove the eternity of matter, science furnishes another ground for this conclusion. Suns are parting with their energy. The earth, like the moon, will cease to support life, and will drop into the sun, which, notwithstanding such fresh supplies, will finally be extinguished. Such processes will continue in the universe, so science teaches, until its energies are equalized and it becomes a uniformly distributed mass with neither motion nor life. Now, if the primal fire-mist, with which the nebular hypothesis and the doctrine of evolution begin their account of the universe, had been eternal, it would long ago have finished the whole course of its development, the dissipation and equalization of energy would have been complete before the present, and a dispersed universe would now be that scene of desolation and death which physical science teaches is the inevitable doom of all that is.

I am aware of Kant's criticism and rejec-

tion of the cosmological proof in his "Critique of Pure Reason"—a foregone rejection demanded by his entire system, which *must* set aside all *rational* proofs, in order to throw the entire weight of theistic demonstration upon Kant's peculiar *moral* and *practical* argument. This criticism I do not consider decisive. Kant, in the same "Critique," allows that it "has a certain persuasive force with the speculative not less than with the common intellect"; while in the "Critique of Practical Reason" he declares: "The determination of the causality of beings in the world of sense, from the very nature of the case, can never be unconditioned. Yet, for every series of conditions there must necessarily be something that is unconditioned, and therefore there must be a causality which is completely self-determined."[1]

Kant's "Critiques"

Locke's use of cosmological reasoning in the celebrated tenth chapter of his fourth

Locke

[1] Watson's "Selections," pp. 276, 277.

book, where he asserts that "its evidence is equal to mathematical certainty," and that "there is no truth more evident than that something must be from eternity," is too familiar to need citation or analysis here.

Leibnitz

(Compare the same book and chapter of Leibnitz's *Nouveaux Essais*.) We must be careful, however, not to include more in the conclusion of the cosmological proof than the premises warrant; and to that end may

Lotze

listen to the friendly warning of Lotze: "Thus then the cosmological proof could only conclude from the conditionalness and conditioned necessity of all individual real things in the universe, to an ultimate Real Being which, without being conditioned by anything else, simply is, and simply is what it is, and finally may be regarded as the sufficient reason through which all individual reality is, and is what it is. And this way of looking at the proof clearly shows that it cannot of itself attain to the religious conception of a God, but only to the metaphys-

ical conception of an Unconditioned."[1] But surely an Unconditioned Real Being, which simply *is*, without derivation of its existence or nature from any superior source, and which is the Sufficient Ground of all reality, is a sufficiently valuable and comprehensive conclusion for this one form of proof to reach: the Intelligence, the Morality, the Personality of this Unconditioned Real Being we may reach by other paths, as has already been done, in part, in the process of disproving the eternity of matter.

Worth and Width of the Conclusion

In the next chapter, further considerations against the possibility of the infinite regress of impersonal and unintelligent causes will be presented—considerations growing out of an examination into the ultimate nature of cause, and leading to its determination as Personal.

[1] "Mikrokosmus," II. 666.

CHAPTER VII

THE NATURE OF CAUSE

Hume's Deductions from Locke's Empiricism

WHEN David Hume, carrying forward the empiricism of Locke to its issues in a thoroughgoing philosophical skepticism, began his attack upon the commonly received doctrine of causality—*i. e.*, the *a priori* judgment that every event must have a cause—he pointed out with truth that we have *no perception through the senses* of the causal nexus: observation, or what is loosely called experience, reveals only the external succession of two facts, events, or phenomena. "All that lies behind bare and isolated phenomena is a mental product. No observation can discover substance, cause, or power; and those who admit nothing but observation and its direct results must, like Hume, deny their existence in the external world."[1]

[1] Stuckenberg, "Introduction to the Study of Philosophy," pp. 124, 125.

Through this Scotch mist, however, shone the beams of two rising suns. Hume's skepticism aroused Immanuel Kant "from his dogmatic slumber," and thus initiated the brilliant course of German philosophy from Kant through Fichte and Schelling, Herbart and Hegel, to Lotze, Schopenhauer, and Hartmann. At home it produced the great school of Scottish philosophers from Reid to Hamilton, until recently still represented by Calderwood and McCosh. And this Scottish philosophy, passing over into France, entered as an essential element into the eclecticism of Cousin and Jouffroy, and brought to a sudden halt the materialism and sensualism that were sweeping all before them.

Results of Hume's Skepticism in Germany, Scotland, and France

But, in particular, Hume's skepticism led to a profounder doctrine of causality. Let me attempt to formulate what seems to be the true doctrine, to which a large section of the philosophical, and even of the scientific, world has either already given its adhesion

Analysis of True Doctrine of Cause as Personal

or is rapidly tending. In this doctrine there is (I.) an *a priori* element, and (II.) an *a posteriori* element. The *a priori* element is the mind's native judgment, universal and necessary, that every event or change must have a cause. But this *a priori* element demands and declares simply the existence of cause: it gives no insight into the nature of cause. This is gathered *a posteriori;* and yet not from the world of sense-perception, except by way of negation or exclusion. This *a posteriori* element is hence twofold: (1) *negative*, as Hume established, by sense-perception we know only sequences in external nature — observation does not afford a knowledge of cause; (2) *positive*, we recognize ourselves as immediate and real causes, in our volitional control (*a*) of our minds and (*b*) of our bodies. Therefore, since the only cause of which we have knowledge, or to which consciousness testifies, is will stimulated by sensibility and guided by intelligence, and these are of

the essence of personality, we seem authorized to conclude that the ultimate explanation of change in nature, of what is commonly termed, even by science, *secondary* or physical causation, is also Will, moving toward ends and ideals, which afford adequate motivity in desire, and directed by intelligence—*i. e.*, a Personal Will, a Personal Unconditioned Real Being—God. This conception of Cause, it will be shown in the sequel, is in essential harmony with some modern physical doctrines concerning the constitution of matter.

Before proceeding, however, to deduce the consequences and to examine the collateral issues and evidences of this doctrine, let us look a little more closely to its immediate foundations. For the sake of brevity, a condensed statement from Calderwood, which embraces the positive argument, the citation of authorities, and the refutation of objections, may be quoted here: "It is in our consciousness of self-

Calderwood's Statement

control for the determination of activity that we obtain our only knowledge of causality. Each one knows himself as the cause of his own actions. In the external world we continue ignorant of causes, and are able only to trace uniform sequence, as Hume and Comte have insisted. But in consciousness we distinguish between sequence and causality. We are conscious of our own causal energy by knowing the origin of our activity in self-determination. (This was illustrated, though inconsistently, by Locke, 'Essay' II. xxi. 5. It was held by Maine de Biran, '*Nouvelles Considerations*,' page 363; and Cousin, '*Cours de l'Histoire de la Philosophie*,' second course, L. xix., translated 'History of Modern Philosophy,' II. 206; and Mansel, 'Prolegomena Logica,' 139; and is generally held by those who adopt the libertarian side. It is, however, rejected by Sir W. Hamilton, 'Metaphysics,' II. 390; 'Reid's Works,' 866; 'Discussions,' 612; and in this he

finds a supporter in Mr. Mill, 'Examination,' 357.) Regarding the question from the point of view afforded by the movement of the limbs, on which Maine de Biran had dwelt, Hamilton argues thus: 'Between the overt act of corporeal movement of which we are cognizant, and the internal act of mental determination, of which we are also cognizant, there intervenes a numerous series of intermediate agencies of which we have no knowledge; and consequently we can have no consciousness of any causal connection between the extreme links of this chain.'—'Metaphysics,' II. 391. That the management of brain, nerve, and muscle is not matter of consciousness is admitted, and consequently that we have no consciousness of causal connection between volitions and the movements of these organs. But we are conscious of the sensation of movement, and we are conscious of observing the movements. How, then, does the case stand? I will to move my

arm, and both by sensation and observation I recognize the consequent movement. This is not direct consciousness of the causal nexus, but it is consciousness of the *originating* force of the whole, the efficiency of which is tested by direct experiment and confirmed by results within our own consciousness. According to Hamilton's theory it is *origin* of existence we need to recognize in order to reach causality; and here we have consciousness of the origin of our activity. But the question is really to be settled elsewhere. Obscurity hangs over the intermediate stages in the case of bodily movements. But in the use of our mental powers—in the government of understanding and desire, for example—it is otherwise. Everything is within consciousness. By exercise of will we bring the intellect into use, and by continuance of volitional energy we prosecute a course of reasoning. We are conscious of the fact of control, and, in immediate connection and depend-

ence, we are conscious of the controlled exercise of mind. It is in this control of mental power that we have direct knowledge of the exercise of causal energy. 'Intelligence endowed with will is causality.' (Kant, 'Metaphysic of Ethics,' third edition, pages 64–70.) In the management of bodily organs the area of knowledge is widened only so far as volition is concerned, and is only mediate so far as the next act is concerned. On this subject see Chalmers's 'Sketches of Mental and Moral Philosophy,' chapter iv., section 27, edition 1854, page 161; Hazard on 'Causation and Freedom in Willing,' page 7; and a valuable passage in Cairns's 'Treatise on Moral Freedom,' page 222.''[1]

Sir John Herschel's View

To the same effect may be quoted no less a scientific authority than Sir John Herschel, whose clear and penetrating understanding, so rare among merely physical inquirers, has served us so good a turn in

[1] "Moral Philosophy" (ninth ed.), pp. 184, 185.

the preceding chapter. He declares: "In the only case in which we are admitted into any personal knowledge of the origin of force, we find it connected (possibly by intermediate links untraceable by our faculties, but yet indisputably *connected*) with volition, and, by inevitable consequence, with *motive*, with *intellect*, and with all those attributes of mind in which—and not in the possession of arms, legs, brains, and viscera—personality consists."[1]

It has been asserted above that this doctrine is held by a very considerable section of the philosophical and scientific world. This assertion remains to be made good. Calderwood, it will be observed, says that this theory "is generally held by those who adopt the libertarian side" in the controversy about the freedom or the bondage of the will, and enumerates a considerable number of authorities of the first philosophical importance who assert and maintain this

[1] "Familiar Lectures on Scientific Subjects," p. 462.

position. The doctrine that efficiency, or efficient cause, the only true cause having a basis in *a priori* intuition, resides only in will, divine or created—lower intelligences, particularly man, having the power to use and to modify nature in conformity with fixed law, and to project original influences and to introduce changes which perpetuate themselves in their consequences —and that the forces operating in the universe are a never-ceasing exercise of the Divine Will, in which alone a sufficient and ultimate source of this energy can be found, is advocated by Dr. Samuel Clarke, Dugald Stewart, John Wesley, Kant, Schopenhauer, Nitzsch, Julius Müller, Maine de Biran, Cousin, Dean Mansel, Thomas Chalmers, Dr. Whewell, Dr. Carpenter, Channing, James Martineau, Hedge, Dr. Whedon, Dr. Summers, Dr. Cocker, President Bascom, Principal Tulloch, Professor Cairns, Rowland G. Hazard, Sir John Herschel, Professor Grove, the Duke of Argyll, Alfred Russell

Enumeration of Authorities

Wallace, Richard A. Proctor, Professor Norton, Alexander Winchell, and many others.

Spencer

Herbert Spencer concedes: "The force by which we ourselves produce changes, and which serves to symbolize the cause of changes in general, is the final disclosure of analysis."[1]

Winchell

Winchell alleges that "this conception of supreme, intelligent power, enthroned at the fountain-head of phenomena, and displaying its activity in force acting upon atoms and aggregates of matter, does not differ, so far as this qualification goes, from the conceptions set forth by Spencer, Huxley, Tyndall, and Du Bois-Reymond."[2]

Schopenhauer and Wallace

Schopenhauer reduces all force in nature to will. Wallace, in his "Contributions to the Theory of Natural Selection," holds it certain that all matter is force, and probable that all force is will. The German philosopher and the English scientist reach the same conclusions by different processes

[1] "First Principles," p. 225.

[2] "Reconciliation of Science and Religion," p. 258.

based on different grounds. Zöllner has placed their views in parallel columns, thus emphasizing their similarity.

Carpenter, Grove, and Norton

"The deep-seated instincts of humanity," says Dr. Carpenter, "and the profoundest researches of philosophy alike point to mind as the one and only source of power."[1] In his "Human Physiology" the same high scientific authority says: "Force must be regarded as the direct expression of that mental state which we call Will. All force is of one type, and that type is mind."[2] "Causation," says Grove, "is the will, creation the act, of God."[3] Professor Norton, of Yale, speaks of "a perpetual stream of force flowing from the Infinite Source of all power."[4]

Dr. Cocker's Position

Fully to represent Dr. Cocker's view would be to transcribe his "Theistic Con-

[1] In *Nature*, VI. 312.

[2] "Human Physiology," p. 542.

[3] See his "Correlation and Conservation of Forces," Youmans's edition, p. 199.

[4] Letter to Dr. Cocker.

ception of the World," to which, in this connection, I gladly acknowledge indebtedness. A sentence or two must suffice. "Force is an attribute of mind or spirit, and of mind or spirit alone. Spirit force is the only force in the universe." "All the forms of energy manifested in the universe are only transformations of the one omnipresent force issuing from the one fountain-head of power—*the Divine Will.* The final disclosure of modern science is the convertibility and homogeneity of all forms of physical energy—'a dynamical self-identification masked by transmigration.'" "The Divine conservation of the world is the *simple, universal, uniform efficiency of God.*"[1]

Winchell's Analysis

Winchell, who, in his "Reconciliation of Science and Religion" (Articles iv., v., and ix.), has made a brilliant, though not uniformly sound, contribution to the doc-

[1] "The Theistic Conception of the World," pp. 236, 237, 243.

trine of causality, analyzes the "genesis and constitution of our notion of causation in the existing universe" into eleven elements, not all of which are really distinct. According to Winchell, (1) causation implies the existence of a real cause, an entity clothed with causative efficiency, excluding secondary causation; (2) causative reality must be antecedent to all its effects; (3) the notion of causality implies correlative subjectivity and objectivity—in harmony with Aristotle, however, Winchell allows that "in the realm of creative activity the objective datum is not actual, but potential," and that "while only creative efficiency exists, otherness is a mere capacity of existence, and yet effectuation must be directed objectiveward"; (4) causality implies the possession of consciousness by the causal efficiency; (5) the causal agent must be able to form a conception of a specific nonexistent effect; (6) the consciousness of the principle of cau-

sality must arise—the possibility of connecting efficiency with a given effect; (7) the effectuation of original causation implies the presentation of motive; (8) the efficient cause may discern a contingency or condition which stands in some relation either to cause or effect, and which may modify the amount or direction of the causal efficiency, or else the kind or amount of the effect; (9) the influence of the contingency on the motive must be cognized; (10) the causal agent must be conscious of a desire to direct efficiency toward the contemplated effect; (11) the consummation of the causal act implies the exertion of *will*.[1]

Justification of Winchell

This is little more than a psychological analysis of human volition or causality generalized and applied in detail to the efficiency of the deity. It is a procedure not only

[1] Alexander Winchell, "Reconciliation of Science and Religion," pp. 101–117. His recapitulation (pp. 263, 264) does not agree in every particular with this analysis.

legitimate, but necessary—guaranteed by the profoundest and latest results of the theory of knowledge in the account which that department of philosophy gives of the genesis of all the categories of reality, which are detected by the scrutiny and analysis of the conscious operations of our own minds. There may be more or less of bad psychology in it, on the one hand, or of bad theology, on the other, without vitiating the general result. Consequently I need not concern myself with these subordinate issues here. Dr. Winchell follows the right—the only—analogy, and reaches results in harmony with the doctrine expounded and advocated in this chapter. In further exposition of the fourth element of his analysis, Dr. Winchell sums up the vital points of his position: "A cause without consciousness would sleep forever in potentiality. In order to become an actual cause it must have knowledge of its own existence, and of the possibility, at least, of other existence, and the possession

of efficiency. It must have a further consciousness of all the relations subsisting between cause and effect, and of all the conditions which modify its causal activity. This necessity excludes the possibility of any system which is a pure, unconscious materialism, or a pure, unconscious dynamism."[1]

He concludes his discussion with this strong statement of the fundamental truth involved: "Finally, the consummation of the causal act implies the exertion of *will*. There must be an executive determination of conscious efficiency toward the contemplated effect which has awakened desire and purpose. All the other causative steps converge here. Will is the last condition of effect. Being the last condition, Will always implies intelligence and sensibility. 'Will is the synthesis of reason and power.' (Cocker)."[2]

[1] "Reconciliation," etc., p. 105.

[2] *Ibid.*, pp. 117, 118. Drs. Winchell and Cocker

As a scientist, Dr. Winchell presents us with the following: **Possible Conceptions of Matter and Force**

Recapitulation of Possible Conceptions of Matter and Force.

A. The dynamical conception of matter.
B. The substantive conception of matter.
  I. Matter self-motive (hylozoistic).
  II. Matter not self-motive.
    1. Endowed with force.
      (*a*) The force inherent (popular view).
      (*b*) The force delegated.
    2. A mere channel for transmission of force.
      (*a*) The force initial or peripheral.
        (*aa*) One primordial impulse.
        (*bb*) Impulse constantly renewed.
      (*b*) The force proceeds from an immanent cause.[1]

The dynamical constitution of matter, according to which the ultimate atom is simply a center of force, Dr. Winchell did not regard as scientifically established in his day, though Alfred Russell Wallace, and numerous oth- **Dynamical Constitution of Matter**

were colleagues in the faculty of the University of Michigan.

[1] "Reconciliation," etc., pp. 130, 131.

er high scientific authorities, unhesitatingly embrace this view. If established, it would seem to lend confirmation to the theory here set forth, as does the kindred scientific truth of the correlation of forces. "Substance," the unformed material or πρώτη ὕλη upon which the "form" or the attributes and laws of the atom are stamped, disappears, and the latest science of modern times comes around to the probable doctrine of Aristotle, and the certain doctrine of his master, Plato. Will, Mind, is the source and author, the creator and sustainer through and through, of every so-called material object. Of the several substantive conceptions, Dr. Winchell, for reasons which will be sufficiently obvious to the reflecting reader, rejects all save the last—namely, that matter is not self-motive, but, on the contrary, is a "mere channel for transmission of force," and that "the force proceeds from an immanent cause." Upon this view he dilates with genuine eloquence:

"This view is, that natural force has no existence except as the direct effort of the Supreme Will. It supposes matter to be absolutely inert and naked of energy. Every form of force is a particular mode of divine activity. Every movement and every change reveals directly the presence of the Supreme Power; and man is surrounded by an array of admonitions of the divine presence the most awe-inspiring possible. Nay, man himself is the vehicle of the voice of God to his own sensorium. The changes of matter are in progress in our own bodies. Infinite agency permeates our very selves, assorting our nutrition, building us up, effecting repairs, wasting our tissues, and carrying us into the grave—nay, not forsaking us even there, but tenderly bearing the effete molecules which we can use no longer into new situations and collocations, to subserve other predetermined uses in the economy of nature."[1]

[1] "Reconciliation," etc., p. 127. I was a pupil of Dr.

Interaction of Philosophy and Science

Thorough science always issues in philosophy. Philosophy may be derided, but cannot be banished. Science, defining more clearly day by day its own fundamental problems concerning matter, force, and their relations, is destined to become increasingly philosophical. Herschel and Wallace and Grove and Winchell already walk hand in hand with Kant and Schopenhauer and Cousin and Stewart. Philosophy seems to fail of permanent solutions of her problems, because throughout her history she has handed her results over to an ever-enlarging science. Lavishly casting the richest gifts into the common treasury of knowledge, philosophy advances, first to

---

Winchell's at the time of the publication of this book, and, having just awaked to a keen interest in the problems of philosophy, I was deeply impressed both by the personality and the writings of this magnetic man, who indulged an inquisitive pupil in many prolonged private interviews. As a lecturer, he was a master of a sublime, if somewhat imaginative, eloquence, that I have never known surpassed in the school room.

the realization, and afterwards to the solution, of profounder and more difficult problems. Her task is thus never done. The more she does the more she has to do.

Twofold Value of this Doctrine for Theism

The doctrine of causality here presented has a twofold value for theism: 1. It is an immediate proof of the Personality of the Unconditioned Power that made and conserves the universe. 2. It supplements the cosmological argument by its abolition of the whole realm of so-called secondary causes. The infinite regress itself would demand God at every step.

CHAPTER VIII

THE ARGUMENT FROM DESIGN: CHARACTER AND ANALYSIS

Name of the Argument

THE argument for the divine existence derived from the presence of order, contrivance, adaptation, design, in the world, is commonly known as the teleological proof. Occasionally it has been called cosmological, since the word "cosmos," like "*mundus*" and "universe," carries in it an implication of harmony. This term, however, is better reserved for the argument to which I have already applied it. The present proof may be simply designated the argument from design.

Kant's Characterization

The proof from design in nature is level with the popular intelligence, and by the man of plain understanding has always been accepted as convincing. "This present world presents to us so immeasurable a stage of variety, order, fitness, and beauty,"

says Kant, "whether we follow it up in the infinity of space or in its unlimited division, that even with the little knowledge which our poor understanding has been able to gather, all language, with regard to so many and inconceivable wonders, loses its vigor, all numbers their power of measuring, and all our thoughts their necessary determination; so that our judgment of the whole is lost in a speechless but all the more eloquent astonishment." This profound reasoner and merciless critic, who unceremoniously sets aside all ontological and cosmological reasoning as vicious, and eventually rejects the teleological proof, throwing the whole weight of theistic demonstration upon his peculiar form of the moral argument, nevertheless concedes that the teleological proof will always deserve to be treated with respect. "It is the oldest, the clearest, and most in conformity with human reason. It gives life to the study of nature, deriving its own existence from it, and thus constantly

acquiring new vigor. It reveals aims and intention where our own observation would not by itself have discovered them, and enlarges our knowledge of nature by leading us toward that peculiar unity the principle of which exists outside nature. This knowledge reacts again on its cause—namely, the transcendental idea—and thus increases the belief in a supreme Author to an irresistible conviction. It would, therefore, be not only extremely sad, but utterly vain, to attempt to diminish the authority of that proof. Reason, constantly strengthened by the powerful arguments that come to hand by themselves (though they are no doubt empirical only), cannot be discouraged by any doubts of subtle and abstract speculation. Roused from every inquisitive indecision, as from a dream, by one glance at the wonders of nature and the majesty of the cosmos, reason soars from height to height till it reaches the highest; from the conditioned to conditions, till

it reaches the supreme and unconditioned Author of all."[1]

Familiar passages from the Scriptures— in Job (xxxvii.–xli.), the Psalms (viii., xix., civ.), and Isaiah (xl. 21–26—a noteworthy statement), in the Sermon on the Mount (Matt. vi. 25–32), and in the discourses of St. Paul (Acts xiv., xvii.)—assume the argument as self-evident. Socrates, in the conversation with Aristodemus, as recorded by Xenophon,[2] presents the argument from the organs of the human body so convincingly that Aristodemus assents that "man

The Scriptures

Socrates

[1] These two passages are taken from the "Critique of Pure Reason," Max Müller's translation, II. 534–536. The language in which Kant rejects the argument is as follows: "But although we have nothing to say against the reasonableness and utility of this line of argument, but wish, on the contrary, to commend and encourage it, we cannot approve of the claims which this proof advances to apodictic certainty, and to an approval on its own merits, requiring no favor and no help from any other quarter." (Müller, II. 536.) Such claims no reasonable theist of to-day would set up.

[2] "Memorabilia," I. 4; IV. 3, 13.

must be the masterpiece of some great Artificer." Cicero,[1] in a passage derived from Aristotle, represents men dwelling in subterrean, illuminated habitations, adorned with statues and paintings, who, upon reaching the surface of the earth, are immediately convinced by the face of nature, and particularly by the motions and offices of the heavenly bodies, of the existence of the deity. In modern times Lord Bacon's comparison of final causes to vestal virgins, consecrated to God and therefore barren, has been misunderstood and falsely applied. Bacon meant to recall the science of his day to the search for efficient causes, a search which has ever since been the fruitful source of progress in the investigation of every realm of nature. That his word on this subject was not spoken in vain, the history of science testifies. That Bacon did not regard efficient as excluding final causes is evident from his language in the essay

Cicero

Lord Bacon

[1] *De Natura Deorum*, II.

on atheism: "For while the mind of man looketh upon second causes scattered, it may sometimes rest in them and go no farther; but when it beholdeth the chain of them confederate and linked together, it must needs fly to Providence and Deity."

Aristotle

The creative energy of Aristotle's mind is evinced by no fact more conspicuously than by this—that many topics which he was the first clearly to define and to introduce within the limits of methodical, rational inquiry, conscious of its problems and the conditions of their solution, have maintained themselves as questions of the first moment to this day. He was the founder of natural history, of empirical psychology, and of the science of rights. Moreover, not only was he the first to draw the attention of philosophers to the problems, but in numerous instances he furnished the final solutions which the world of mind has been content or compelled to accept as incapable of improvement or further development.

Of formal logic Kant said in the preface to the second edition of the "Critique of Pure Reason": "Since Aristotle, it has been unable to advance a step." Well might a distinguished professor of philosophy in a Southern university choose as the theme of his inaugural discourse: "Now abide Socrates, Plato, and Aristotle—these three; but the greatest of these is Aristotle."

His Doctrine in Physics and Metaphysics

Both in his "Metaphysics" (I. 3) and in his "Physics" (II. 3) Aristotle makes a formal enumeration of the four principles (ἀρχαί or αἰτίαι) which must guide the inquiries of the intelligent and systematic seeker after truth. "The causes," says he, "are treated under a fourfold division; of which the first cause we call the substance (οὐσίαν) and the essence; . . . another, the matter and the substrate (ὑποκείμενον); a third, that whence issues the beginning of motion; and a fourth cause, lying over against this last mentioned as its exact opposite, that on account of which there is action, or the good

intended, for this is the end of all genesis and motion."[1] Final cause is thus for Aristotle the most important of all. In the "Physics" this final cause is further explained and illustrated: "Yet another cause is the end (*τὸ τέλος*)—that is, that on account of which (*τὸ οὗ ἕνεκα*) anything is done, as health, for example, is the end of taking a walk."[2]

[1] In the text I have somewhat freely translated the following Greek of "Metaphysics," I. 3: *Τὰ αἴτια λέγεται τετραχῶς, ὧν μίαν μὲν αἰτίαν φαμὲν εἶναι τὴν οὐσίαν, καὶ τὸ τί ἦν εἶναι, . . . ἑτέραν δὲ τὴν ὕλην καὶ τὸ ὑποκείμενον, τρίτην δὲ ὅθεν ἡ ἀρχὴ τῆς κινήσεως, τετάρτην δὲ τὴν ἀντικειμένην αἰτίαν ταύτῃ, τὸ οὗ ἕνεκα καὶ τἀγαθόν, τέλος γὰρ γενέσεως καὶ κινήσεως πάσης τοῦτ' ἐστιν.* As is well known, Aristotle employs the term *οὐσία* in two senses: 1. *οὐσία* = *τὸ τί ἦν εἶναι* ("the being of what a thing was"), or *ἡ κατὰ τὸν λόγον οὐσία*, the *essence*, which is the objective correspondent of the concept and embodied in it. 2. *οὐσία* = *ὕλη* or *ὑποκείμενον*, the matter or substance which is the base of attributes or predicates. Unless this distinction is kept in mind, it will be hard to save Aristotle from the charge of self-contradiction. Cf. Ueberweg, "History of Philosophy," I. 157–161.

[2] "Physics," II. 3: *ἔτι ὡς τὸ τέλος. τοῦτο δ' ἐστὶ τὸ οὗ ἕνεκα, οἷον τοῦ περιπατεῖν ἡ ὑγίεια.*

Scholasticism Based on Aristotle

These four Aristotelian causes the mediæval scholastics designated Material, Efficient, Formal, and Final (*causa materialis*, *efficiens*, *formalis*, *finalis*); though Aristotle himself never employed adjective, but always substantive, designations (ὕλη, ἀρχὴ κινήσεως, εἶδος, τέλος). In a mechanical product, which is external to its causes, all four of the principles may be sharply distinguished.

Illustration

This is the case with a house: the wood, brick, or stone used in its construction is the material cause; the plan in the mind of the architect, which guides in the disposition of the materials and thus embodies itself in the house, is the formal cause; the actual builders—bricklayers, carpenters, etc.—are the efficient cause; and the purpose which the house is intended to serve is the final cause.

From this illustration it will be readily seen that the formal and final causes, or the essential and telic, tend to coalesce. The *plan* guides the *builder* in his use of *mate-*

rials for the accomplishment of a *purpose*. Thus the purpose determines the plan. But the teleology of Aristotle has two very distinct branches—an internal and external, the essence and the purpose, the end of a thing as realized absolutely in its own perfection (entelechy), and the end as indicated in relative adaptations. "The immanent end of every object, by the recognition of which the Aristotelian doctrine of finality is radically distinguished from the superficial, utilitarian teleology of later philosophers,"[1] is only partially reproduced by the modern distinction between homological and teleological arguments, which is based on the difference between Type or Plan and End or Purpose (τύπος and τέλος). Kepler had a correct apprehension of Aristotle's immanent or essential teleology, when, in the midst of his great astronomical discoveries he exclaimed, "O God, I think thy thoughts after thee!" The reverent Agassiz also

Homology and Teleology

Kepler

Agassiz

[1] Ueberweg, "History," I. 162.

penetrated the secret when he declared that "thorough classification is an interpretation of God's thoughts." The rationality in nature—the true essence of the genera of nature—must be correctly seized by the human intelligence and embodied in the concept or class name which, thus objectively determined from without, frees itself from the personal whims or the arbitrary decisions of the individual thinker. The concept or class is entitled to recognition as permanent, real science only when the elements of this objective essence, without omission and without addition, are lodged securely in the class name. The rationality is first in nature, then in human thought, and is finally stored in language. This essential, objective, immanent teleology, which Aristotle was the first to grasp in its full significance, constitutes one of the most impressive proofs of the intelligence of the Author of nature, which might well occupy our attention throughout the remainder of

The Rationality in Nature

this chapter; but the subject must be dismissed with a single profound remark of Ueberweg's, "The act of knowing, in so far as it is the copying in the human consciousness of the essence of the thing, is an *after*-thinking of the thoughts which the divine creative thinking has built into things: in *action* [divine and human] the preceding thought determines what actually exists, but in *knowing*, the actual existence, in itself conformable to reason, determines the human thought";[1] and a kindred one of Schleiermacher's, "To the proposition that thinking must conform to being, must be added another, that being must conform to thinking: the latter proposition is the principle and measure for every activity of the will, the former for every activity of thought."[2]

Ueberweg

Schleiermacher

[1] Ueberweg, "System of Logic," § 1, p. 2.

[2] Schleiermacher, "Dialektic," ed. by Jonas, p. 487, quoted by Ueberweg in his "Logic." Compare Tigert's "Logic," p. 32.

Scientific Misconception

There is a strange misconception which dominates much of the current scientific rejection of final causes. It is believed that whenever an effect is shown to be produced by efficient causes, operating according to mechanical laws, final causes are thereby excluded. In other words, efficient and final causes are supposed to be mutually exclusive: the presence of one is the certain index of the absence of the other. The uniformity of the action of mechanical, efficient causes is held to be inconsistent with the supervision and control of a personal intelligence with reference to previously chosen ends; and the interference of such a rational and volitional person is supposed to involve some break in the continuity of physical causation. The first section of the detailed discussion, with which the next chapter will be occupied, will be, therefore, the proof of the proposition: *That efficient and final causes may and do coöperate in the production of the same effect.*

Nature of the Argument

The teleological argument, as in the case of the cosmological proof, which has previously passed under review, involves both a rational and an empirical element. The rational element is the principle, universal and necessary (which would serve as the major premise of a syllogism, should one be constructed), that contrivance, adaptation, design, in the effect is proof of intelligence in the cause. The empirical element is the statement, based both on the everyday observations and the scientific researches of men, that there are manifold instances of design in nature (which statement would serve as the minor premise of the above-mentioned syllogism). Little exception can be taken to Kant's presentation of the principal points of the teleological proof: "(1) There are everywhere in the world clear indications of an intentional arrangement carried out with great wisdom and forming a whole indescribably varied in its contents and infinite in extent; (2) the fitness of this

Kant's Summary

arrangement is entirely foreign to the things existing in the world, and belongs to them contingently only, that is, the nature of different things could never spontaneously, by the combination of so many means, co-operate toward definite aims, if these means had not been selected and arranged on purpose by a rational disposing principle, according to certain fundamental ideas; (3) there exists, therefore, a sublime and wise cause (or many), which must be the cause of the world, not only as a blind and all-powerful nature, by means of unconscious *fecundity*, but as an intelligence, by *freedom;* (4) the unity of that cause may be inferred with certainty from the unity of the reciprocal relations of the parts of the world, as portions of a skillful edifice, so far as our experience reaches, and beyond it, with plausibility, according to the principles of analogy." [1]

[1] "Critique of Pure Reason," Müller's translation, II. 536, 537.

Skeptical Attacks: Hume and Mill

Both of the elements in the proof, mentioned above, the rational and the empirical, have been attacked or denied. Hume, for example, followed by Stuart Mill, objects that the assumption that nature turns out her products after the manner that man turns out his is unjustifiable. This objection may mean one of two things, either (1) that there are no real cases of design in nature, but only the appearance of it, every effect being simply a mechanical result fully accounted for by efficient causes; or, it may mean (2) that though the world presents unquestionable instances of adaptation, it is presumptuous to attribute these adaptations to a designing mind. The second section of our argument, therefore, as developed in Chapter X., will consist of a critical defense of the rational principle against skeptical attacks, and the third (Chapter XI.) of an exhibition of final causes in nature, with a refutation of their impugners. In this connection there must be a somewhat minute

examination of instances of design in (1) the mechanical and inorganic sphere, (2) the chemical, (3) the organic, (4) the instinctive, and (5) the intellectual.

If physical causation, ordinarily so called, finds its only adequate explanation in the ceaseless efficiency of the Divine Will, as has been argued at length above in Chapter VII.; and if final causes are explicable only by a final reference to the purposes of the Divine Intelligence, as will be shown in the next chapter; then the coöperation and union of efficient and final causes in the production of one effect will not appear strange, since the universal Will and Intelligence are joined together in the absolute unity of One Divine Person.

CHAPTER IX

THE NATURE OF FINAL CAUSE AND ITS HARMONY WITH EFFICIENT CAUSE

Finality and Efficiency

How the upholders of final causes could ever have been represented as impugners of efficient causes is passing strange. If a final could substitute an efficient cause, we should have an exception to the law of causation itself, which must be understood as affirming that every event or change must be due to active or efficient cause. Theists have always zealously asserted and maintained the validity of this principle, without which the cosmological proof of the existence of God comes to naught. That every event is due to an adequate cause, is the path to the only bridge by which we may pass from contingent to absolute existence, from the finite to the infinite, from nature as a produced effect to God as a producing cause. All except a few belated natural realists, whose doctrine consistently

carried out issues in materialism, also consent that it is the chief bridge by which we cross from mental states to objective existence; from knowledge, as the possession of a mind, to the independent reality which accounts for the knowledge. The defenders of the theistic conception of the world would therefore be the poorest of tacticians, as well as the most inconsequent of reasoners, if the establishment of their contention with regard to teleology involved the destruction of their carefully chosen and stubbornly defended position in the field of cosmology. On the contrary, the vital interests of teleology demand the fullest possible interpretation of the cosmological principle of cause and effect. Teleology "looks on nature with no private eye. . . . True to the law in its deepest and fullest conception, it enlarges the comprehension of it so as to say distinctly that the cause must be *adequate* to all that appeared in the effect. . . . For an effect which reveals no

Valentine

adaptation, the law might be satisfied with a fortuitous or blind force; but for one that exhibits a clear purpose or composite adjustment, it demands an intelligent cause. For a complex movement, with parts wisely coordinated and held steadily and unmistakably to a useful end, it requires a far-seeing and designing cause. . . . The full scope of the principle [of causality], therefore, includes final cause, or design, in the aggregate causal action necessary for the rational explanation of the phenomena of nature.'' [1]

An Alleged Predicament

The private eye of the upholders of dead mechanism and the materialistic interpretation of nature pretends to see that their opponents are in a predicament where one or the other of their chief theistic proofs, the cosmological or the teleological, must be abandoned. Efficiency excludes purpose; purpose excludes the uniformity of mechanical efficiency. Cosmology, it is held, is, in its innermost spirit, atheistic, excluding teleology;

[1] Valentine, "Natural Theology," p. 80.

and teleology, if personal, intelligent, theistic, must declare a war of extermination against rational cosmology. The gravity of this situation is a figment of the materialistic brain. The very brief examination I shall be able to give it will sufficiently indicate the worthlessness of the charge.

Chance

We may be helped to a better insight into the nature of purpose, and the compatibility of design and efficiency, if we accurately define the notion of chance. A chance event is certainly not identical with a causeless event. Events cannot be properly classified as caused and causeless. If sometimes the term chance is loosely employed as if it signified the uncaused, it is not meant that the event came about without an efficient cause, but only that we are ignorant of the cause. This, however, is not a scientifically justifiable use of the term "chance."

Chance, in its proper sense, is opposed, not to the caused, but to the purposed. If

I start out for an afternoon walk, my action is efficiently caused. If my neighbor starts out for a similar purpose, his action is likewise efficiently caused, but in entire independence of me. If, without prearrangement, we meet and take our walk in company, the meeting is, in the proper sense, by chance. "We cannot speak of accidental *occurrences*, but we may speak of accidental *concurrences*."[1] Though the superstitious attached great importance to it, it was by chance that a great storm swept over London the night Oliver Cromwell died. Each event was the result of an independent series of causes: the first of atmospheric conditions, the second of the physical constitution and habits of Cromwell. It is a mere matter of fact—of chance—that the two series of causes climaxed simultaneously in noteworthy effects. "Facts casually conjoined," says the lawgiver of modern in-

McCosh

Mill's Correct Statement

[1] McCosh, "Typical Forms and Special Ends in Creation," p. 44.

ductive logic, "are separately the effects of causes, and therefore of laws, but of different causes, and causes not connected by any law. It is incorrect, then, to say that any phenomenon is produced by chance; but we may say that two or more phenomena are conjoined by chance, meaning that they are in no way related through causation, that they are neither cause and effect, nor effects of the same cause, nor effects of causes between which there subsists any law of coexistence, nor even effects of the same original law of collocation."[1]

The Friendly Pedestrians

But my neighbor and I, finding that occasionally we are thrown together by chance in our afternoon walks, and enjoying each other's company, finally agree to meet at a set time and place ready for walking. Our walk in company is now the result of foresight, purpose, or intention. If some one living on the path along which we travel

[1] J. S. Mill, "System of Logic," Bk. III., Chap. xvii., p. 373.

formerly saw us walking separately for the most part, and very rarely together, now notes that every afternoon we walk in company, he would be able safely to infer that the conjoint action was the result of agreement. The principle underlying this inference is a very simple one. "If we find from observation," says Mr. Bain, "that *A* exists in one instance out of every two, and that *B* exists in one instance out of every three; then, if *A* and *B* are wholly indifferent to each other—neither connected nor repugnant—the instance of *A* and *B* happening together will be (in the arithmetic of chances) one out of every six, on a sufficient everage. If, really, the two coexist oftener, there is connection; if seldomer, repugnance."[1] So secure is this inference that, as Mr. Bain declares, loaded dice are actually detected by a long series of throws. Actual trial has shown that in twelve hundred throws each side will turn

Bain

[1] Professor Alexander Bain, "Logic," p. 316.

up very nearly two hundred times. "Any great deviation from equality," concludes Mr. Bain, "would be a *proof* of loading."[1]

Design no Substitute for Efficiency

If we recur to the case of the friendly pedestrians, we must concede that in the uniform cases of designed meeting the action of each is just as completely determined by efficient causes as in the occasional cases of chance meeting. Design does not substitute efficiency, but depends upon it. The failure of any efficient factor would thwart the purpose. The absence of the purpose would leave all the efficient agents intact, but would render a uniform result, depending upon the certain combination of the independent series of causes, impossible. Only by intelligent direction may independent lines of efficient causation be made to coöperate for the attainment of a common end. Out of the principles clearly involved in this simple illustration may be drawn our definition:

[1] Professor Alexander Bain, "Logic," p. 320.

A final cause is a foreseen end (*finis*, τέλος) intelligently predetermined and efficiently secured by the control or collocation of the agents which are fitted to bring it to pass. There is a threefold demand for intelligence. Intelligence only can account for (1) the foresight, (2) the predetermination, and (3) the collocation or coördination of the independent efficient causes. **Definition of Final Cause**

Eduard von Hartmann[1] distinguishes four elements in final causes: (1) the conception of the end, (2) the conception of the means, (3) the realization of the means, and (4) the realization of the end. The order of conception is, first the end, then the means. The order of execution is, first the means, then the end. Moreover, the end, which is final in execution, is initial in purpose, according to the maxim, *Quod prius est in intentione ultimum est in exe-* **Hartmann**

[1] "Philosophy of the Unconscious," Vol. I., Introduction, Chapter ii.

Doctrine of Janet

cutione.[1] "Thus a final cause," says Paul Janet, to whom every subsequent worker in the teleological field must confess his indebtedness, "is a fact which may be in some sort considered *as the cause of its own cause;* but, as it is impossible for it to be a cause before it exists, the true cause is not the fact itself, but its *idea*. In other words, it is *a foreseen effect*, which could not have taken place without this foresight. . . . In order that an act may be called a final cause, all the series of phenomena required to produce it must be subordinated to it. That phenomenon which is not yet produced governs and commands the whole series, which would be evidently incomprehensible and contrary to every law of causality, if it did not preëxist in some fashion and in an ideal manner before the combination of which it is at once the cause and the result. . . . Thus, in one sense, the eye is the cause of sight; in another sense, sight

[1] Cf. Janet, "Final Causes," p. 2, footnote.

is the cause of the eye. We shall have to conceive, then, as Kant has said, the series of final causes as a reversal of the series of efficient causes. . . . The *mechanical* point of view consists in descending the first of these two series (from the cause to the effect); the *teleological* point of view, or that of final causes, consists in ascending it again (from the end to the means)."[1]

I shall not go so far as to maintain that in every effect the operation of both efficient and final causes may be detected or must be presupposed, though many writers of the first ability contend for this view—for example, President Noah Porter.[2] It is true that the question "Why?" is ambiguous, and is susceptible of either a telic or a strictly causal response. Why do the wheels of the steamer revolve? Because they are driven by the steam, is one answer; because they are the means for car-

Porter's Doctrine Unproved

[1] "Final Causes," pp. 2, 3, 4.

[2] "Human Intellect," § 608, pp. 594, 595.

rying the boat with its passengers to their destination, is another. The first answer we always seek for: that in every instance we demand the second also is not so clear. "Take an eruption of a volcano: each stream of lava, each exhalation, each noise, each flash has its own cause, and the most passing of these phenomena could be determined *a priori* by him who knew accurately all the causes and all the conditions which have brought about the eruption; but to think to attribute to each of these phenomena in particular a precise end is impossible."[1] Efficient cause is uniformly present as the ground of every change. Often it is accompanied with final cause—not as a substitute for, or a supplement to, its own energies, but as a dominant director. That is to say, the effect shows unmistakable signs of (1) prevision of an end, (2) predetermination to realize it, and (3) preadjustment or coördination of independ-

The True Doctrine

[1] Janet, "Final Causes," p. 6.

ent efficient causes to secure it. Thus while in some cases we may detect efficient causes alone, and entirely satisfied with these may feel no call to seek for ends, and in others may demand and find both efficient and final causes, in none do we find final causes alone, independent of efficient causes and substituting them. On the contrary, final causes always stand in a twofold relation to efficient: (1) a relation of *dominancy* in respect of their collocation and coördination; and (2) a relation of *dependence* in respect of the execution of the preordained design.

A Fresh Illustration

Finally, let us by one more illustration make clear to ourselves the harmonious cooperation of final and efficient causes. I form a purpose. This purpose may be that I will emigrate to a new state, purchase a thousand acres of land, clear, fence, and improve it, remove with my family thither, and rear my children, confident that by this plan I shall do the best possible for them

and spend the remainder of my days in peace and plenty. This is an exceedingly complex design. It takes decades, almost a lifetime, to carry it through. The formation of the purpose is undoubted. That in itself it has no *efficient* tendency to secure its realization is equally undoubted. Yet it is a *conditio sine qua non* of the realization of the scheme. By virtue of it the necessary agencies are selected and coördinated. Divers independent efficient causes are set in motion, along separate lines, which converge on the end to be gained. The achievement is impossible without the presence of both classes of causes. Final cause is thus of the nature of a directing supremacy in the midst of, or going before, efficient causes, which nevertheless accomplishes its ends by means of their stability and uniformity. Indeed, the certainty with which man can carry his purposes into execution is in precise ratio to the invariability of the efficient causes upon which he is dependent. Man's

consciousness of the combination of final and efficient causes in his own operations is, as Bacon would say, the "prerogative" fact for the explanation of effects in nature like those produced by man. "If teleology has no place in the structures and functions of animals and plants," says Mr. Thomas Martin Herbert, in one of the most remarkable books of recent times, "if final causes are excluded from them—and the most elaborate adaptation of means to ends gives no indication of design—then there is no such thing as design in the activities of a man, or in those of a society. Conversely, if in human societies and individual men there is undeniably the employment of means to accomplish designed ends, as in the machinery of government, the processes of manufacture, the intricate organization of the railway systems and the post office, and the innumerable purposive actions of every life, it is equally undeniable that in the varied organs and functions

Herbert's View

which contribute to the life of a tree there is also what answers to a final cause. If it be said that physical causation is adequate to produce the result in the last case, and that there is no scientific evidence of anything beside, we have seen that this may be said with equal truth in all the other cases. If it is impossible to combine the action of intelligence with physical causation in the case of a tree, so it is in the case of all human activities. If, nevertheless, we must predicate both agencies where human activities are concerned, we cannot make their seeming incompatibility a bar in the case of other natural functions. The admission that in some way or other the action of intelligence goes along with physical causation in the case of men disqualifies us from refusing to admit that the two may coöperate in external nature."[1]

[1] "The Realistic Assumptions of Modern Science Examined," p. 215. Compare the statement of the alternative, pp. 225, 226, and p. 229.

CHAPTER X

DESIGN IN THE EFFECT PROOF OF INTELLIGENCE IN THE CAUSE

Schopenhauer and Hartmann

THE limitations of space necessitate a very brief review of the considerations which support this thesis. Fortunately to most of us the truth of the proposition is clear, almost to the point of self-evidence. Schopenhauer and Hartmann may discourse in learned jargon of unconscious intelligence or unconscious will; but for the profoundest philosophy, as well as for the popular apprehension, "unconscious intelligence" is a contradiction in terms. Consciousness and mind are coextensive. Materialistic prattle about "unconscious cerebration" or "conscious brain centers" has done much to make such contradictory notions possible. Though brain is the most intimate organ of mind, it possesses no more consciousness than other parts of the body. All matter is

Unconscious Intelligence

unconscious. All mind is conscious, though there are varying degrees of consciousness, from the utmost brilliancy of illumination to the densest obscurity. With this simple iteration of fundamental truths I shall have to dismiss, for the present at least, the objections derived from the systems of philosophy expounded by Schopenhauer and Hartmann.

Evolution

It would be interesting to trace at length the bearings, real or supposed, of recent forms of the doctrine of evolution on teleological science. But here, again, the bare citation of some pertinent declarations of avowed and able evolutionists must suffice. Professor Huxley strikes the keynote: "There is a wider teleology which is not touched by the doctrine of evolution, but is actually based on the fundamental proposition of evolution." Professor Richard Owen insists that "natural evolution, through secondary causes, by means of slow physical and organic operations through

Huxley

Owen

long ages, is not the less clearly recognizable as the act of an all-adaptive Mind, because we have abandoned the old error of supposing it the result of a primary, direct, and sudden act of creational construction."[1] Alfred Russell Wallace, who divides with Darwin the merit of the independent origination of the theory of natural selection, asks: "Why should we suppose the machine too complicated to have been designed by the Creator so complete that it would necessarily work out harmonious results?"[2] My present purpose does not demand any judgment upon the tenability of the hypothesis of evolution: the foregoing quotations sufficiently indicate that, even supposing it to be proved true, its leading advocates believe it compatible with teleology, the support, indeed, of a vaster intelligence, a more comprehensive teleology, than the older doctrine.

Wallace

[1] Quoted in Schmid's "Theories of Darwin," p. 222.

[2] "Natural Selection," p. 280.

Mill Self-refuted

Mr. J. S. Mill repeats Hume's *argumentum ad ignorantiam*, contained in his "Dialogue Concerning Natural Religion." Hume's objection reduces to this, that we cannot conclude that because houses, ships, and watches are the result of intelligent contrivance, nothing other than mind can account for like effects in nature. Such a conclusion Mr. Mill styles, in one place, "an outrageous stretch of inference." I am not concerned to maintain the great English logician's consistency, and so may condemn him out of his own mouth. "The particular combination of organic elements called the eye," says he, in the "Essays on Religion," "had, in every instance, a beginning in time, and must, therefore, have been brought together by a cause, or causes. The number of instances is immeasurably greater than is, by the principles of the inductive logic, required for the exclusion of a random concurrence of independent causes, or, speaking technically, for the

elimination of chance. We are therefore warranted by the canons of induction in concluding that what brought all these elements together was some cause common to them all; and, inasmuch as the elements agree in the single circumstance of conspiring to produce sight, there must be some connection by way of causation between the cause which brought these elements together and the fact of sight. . . . The natural sequel to the argument would be this: Sight, being a fact not precedent but subsequent to the putting together of the organic structure of the eye, can only be connected with the production of that structure in the character of a final, not an efficient, cause."

It will be noted that in this passage Mr. Mill distinctly concedes that the true alternative of design is not efficiency, but chance. This point has already been fully elaborated, and need not detain us here. But, acting on Mr. Mill's hint, we may very well consider the mathematical reasoning which excludes

the "random concurrence of independent causes" for the production of such an organ as the eye. Eduard von Hartmann, in his "Philosophy of the Unconscious,"[1] in which speculative results are obtained and exhibited according to the inductive methods of the physical sciences, enumerates no less than thirteen of the most important conditions of vision, as follows: 1. Special nerves issue from the brain of such a nature that each stimulus affecting these nerves is perceived as a sensation of light. 2. These nerves terminate in a very sensitive nervous tissue, called the retina. 3. Before the retina is placed a camera obscura. 4. The focal distance of this camera is adapted to the indices of refraction from air into the ocular humors (except in the case of aquatic animals). 5. By means of various contractions this focal distance is alterable for most persons from a few inches to infinity. 6. The quantity of light admitted is regulated

Hartmann's Mathematics

[1] I. 50, 51.

by the contraction and dilatation of the iris, affording an additional aid to clear vision by the cutting off of the peripheral rays. 7. The segments of the rods or cones continuous with the nerve-endings form a mosaic, so contrived that each segment changes light waves of definite wave-lengths (color) into stationary waves, and thus produces in the corresponding nerve-fiber the physiological color-vibrations. 8. Binocular vision conditions the perception of solidity and gives the third dimension of space. 9. Both eyes may be simultaneously moved by means of special nerves and muscles, but only in the same direction, thus unsymmetrically with reference to the muscles. 10. As the clearness of the visual pictures increases from the periphery to the center of the eye, an otherwise unavoidable distraction of the attention, by all the objects within the field of vision, is prevented. 11. The reflex turning of the visual axis to the brightest point of the field of vision facilitates education by

the medium of sight and the formation of the ideas of space. 12. The constant flow of tears keeps the surface of the cornea transparent and removes the dust. 13. The secluded position in the bony socket, the lids, the eyelashes and eyebrows, protect the organ. "All these thirteen conditions," argues Hartmann, "are necessary for the existence and maintenance of normal vision; they are all there at the birth of the child, although the occasion for their exercise has not yet been afforded; the circumstances preceding and accompanying their origin are accordingly to be sought in procreation and the life of the fetus. The physiologist, however, it may safely be said, will never succeed, with the least show of probability, in exhibiting the sufficient cause for the origin of all these conditions in the blastoderm of the fertilized ovum and the material fluids which supply it: one cannot see why the child should not develop even without optic nerve or without eye at all.

Suppose now, however, that we fell back upon our ignorance, although that is a bad ground for positive probabilities, and assumed a tolerably high probability for the development of any of the thirteen conditions from the material conditions of embryonic life, say $\frac{9}{10}$ (a probability which but a small portion of our most certain knowledge possesses), still the probability that *all* these conditions follow from the material relations of the embryonic life is only $0.9^{13} = 0.254$. The probability, therefore, of a spiritual cause being required for the sum of the conditions $= 0.746$, *i. e.*, almost $\frac{3}{4}$. In truth, however, the several probabilities perhaps $= 0.25$, or at the most 0.5 [instead of 0.9 as assumed above], and accordingly the probability of a spiritual cause for the whole $= 0.9999985$ or 0.99988—*i. e.*, certainty."

This may be regarded as a successful application of the *reductio ad absurdum* to the hypothesis that coördination, contrivance, design in the effect does not necessarily

imply intelligence in the cause; and here we may rest the case. "How often," asks Archbishop Tillotson, "might a man, after he had jumbled a set of letters in a bag, fling them out upon the ground before they would fall into an exact poem, yea, or so much as make a good discourse in prose? And may not a little book be as easily made by chance as this great volume of the world? How long might a man be sprinkling colors upon canvas with a careless hand before they would happen to make the exact picture of a man? And is a man easier made by chance than his picture? How long might twenty thousand blind men, which should be sent out from the several remote parts of England, wander up and down before they would all meet upon Salisbury Plain, and fall into rank and file in the exact order of an army? And yet this is much more easy to be imagined than that the innumerable blind parts of matter should rendezvous themselves into a world."

Archbishop Tillotson

CHAPTER XI

SOME ADDITIONAL INSTANCES OF DESIGN STUDIED

It was proposed, in the last place, to give a somewhat detailed examination of the instances of final cause exhibited in the various departments of nature. But space remains for only a few cases. The most cursory reader of modern works on botany and zoology cannot fail to remark how completely the language of teleology has taken possession of these sciences. "Even plants," re- Bowne
marks Professor Bowne, in his satirical way, "do the most acute and far-sighted things to maintain their existence. They specialize themselves with a view to cross-fertilization, and make nothing of changing species or genus to reach their ends. A supply is often regarded as fully explained when the need is pointed out; and evolution itself is not infrequently endowed with mental attri-

butes. Such extraordinary mythology arises from the mental necessity for recognizing purpose in the world; and as it would not be good form to speak of a divine purpose, there is no shift but to attribute it to 'Nature' or 'Evolution' or 'Law,' or some other of the homemade divinities of the day."[1] If one should think this the boastful language of a closet philosopher, overconfident because ignorant of science, he needs but to turn to the pages of Charles Darwin to encounter affirmations so strong that to the unscientific they seem extravagant. "The more I study nature," says Mr. Darwin, "the more I become impressed with ever-increasing force with the conclusion that the contrivances and beautiful adaptations slowly acquired through each part occasionally varying in a slight degree but in many ways, with the preservation or natural selection of those variations which are beneficial to the organism under the

Darwin's Concession

[1] "Philosophy of Theism," Preface, p. vii.

complex and ever-varying conditions of life, *transcend in an incomparable degree the contrivances and adaptations which the most fertile imagination of the most imaginative man could suggest with unlimited time at his disposal.*"[1] Of a certain genus of plants Mr. Darwin inquires: "How then does nature act? She has endowed these plants with what must be called, for want of a better term, sensitiveness, and with the remarkable power of forcibly ejecting their *pollinia* to a distance. Hence, when certain definite points of the flower are touched by an insect, the *pollinia* are shot out like an arrow, which is not barbed, but has a blunt and excessively adhesive point. The insect, disturbed by so sharp a blow, or after having eaten its fill, flies sooner or later to a female plant, and, whilst standing in the same position as it did when struck, the pollen-bearing end of the arrow is inserted into the stigmatic cavity, and a mass of pol-

[1] "Fertilization of Orchids," p. 351.

len is left on its viscid surface. Thus, and thus alone, at least three species of the genus catasetum are fertilized."[1] Here is a coördination which binds together the vegetable and animal worlds, between which no link of causal efficiency can be supposed to exist: the only adequate explanation is found in the doctrine of final cause as already expounded in this treatise.

Inorganic Teleology

The existence of teleology within the realm of the inorganic is denied by many. Were this true, the argument would be complete without it. It will be remembered that while the universal presence of efficient causes was asserted, a like claim was not set up for final causes. A single case of undoubted design in nature is adequate proof of the existence of intelligence in the author of nature, just as the presence of a single flint arrowhead is sufficient evidence of the presence of man at some time in a now uninhabited island. Thus the argu-

[1] "Fertilization of Orchids," pp. 212, 213.

ment from design is cumulative. When all the evidences are gathered together the argument, as Kant concedes, becomes irresistible.

The Atoms

But a rational science can hardly consent to the exclusion of teleology from the inorganic sphere. The atoms are "manufactured articles." Whatever view science may finally adopt as to the ultimate constitution of atoms, dynamic or other, their mutual adaptations by which they enter into union for the formation of material bodies still remains a fact. Intelligence is the soil, and design the root, of the tree of the universe.

The Freezing of Water

Let us glance at a single peculiar phenomenon of the inorganic world. Increase of temperature augments the volumes of bodies, while decrease of temperature is followed by contraction of volume. This is the general rule. But water affords a remarkable exception to it. Water, obeying the general law, contracts as its tempera-

ture is lowered until it reaches 39° or 40° Fahrenheit or 4° Centigrade, when expansion sets in and continues until it freezes at 32°. A volume of water at 37° is not so heavy as a like volume at 39°. And so the given volume becomes increasingly lighter as the temperature sinks to the freezing point. Consequently the surface layers of water, which are both colder and lighter than the lower portions, easily freeze, while the body of the liquid remains at about 39° or 40°. The prerogative of interpreting this singular fact might not be readily conceded to any other than a professional scientist: we may attend, therefore, to the commentary which no less an authority than Professor Josiah Parsons Cooke, of Harvard University, offers upon it. "The surface water," says he, "as it cools below this temperature [39°] remains at the top, and in the end freezes; but then comes into play still another provision in the properties of water. Most substances are heavier in their solid

than in their liquid state; but ice, on the contrary, is lighter than water, and therefore floats on its surface. Moreover, as ice is a very poor conductor of heat, it serves as a protection to the lake, so that, at the depth of a few feet at most, the temperature of the water during winter is never under 40°, although the atmosphere may continue for weeks below zero. If water resembled other liquids, and continued to contract with cold to its freezing point; if this exception had not been made, the whole order of nature would have been reversed. The circulation [which exists above 40°] would continue until the whole mass of water in the lake had fallen to the freezing point. The ice would then first form at the bottom, and the congelation would then continue until the whole lake had been changed into one mass of solid ice. Upon such a mass the hottest summer would produce but little effect. . . . It is unnecessary to state that this condition of things would be utter-

ly inconsistent with the existence of aquatic plants or animals, and it would be almost as fatal to organic life everywhere; for not only are all parts of the creation so indissolubly bound together that if one member suffers all the other members suffer with it, but, moreover, the soil itself would to a certain extent share in the fate of the ponds. . . Thus, then, it appears that the very existence of life in these temperate regions of the earth depends on an apparent exception to a general law of nature so slight and limited in its extent that it can only be detected by the most refined scientific observation." [1]

In the organic world examples of design abound on every hand. We have already

[1] "Religion and Chemistry," revised edition (1886), pp. 149–151. My friend, Dr. R. S. Hyer, has called to my attention that cast iron, bismuth, and antimony are also exceptions to the rule. See Ganot's "Physics," 14th ed., p. 328; and Tyndall's "Heat," pp. 109, 110, where a somewhat caustic, but scarcely conclusive, criticism of the argument is presented.

considered, as far as our limits will allow, that marvelous organism, the human eye. Intellect, imagination, and emotion are kindled to a white heat and fused together when one reads that minutely exhaustive and accurate description which the duke of Argyll gives, in his "Reign of Law," of the solution which nature (as we commonly say) gives to the mechanical problem involved in fulfilling the structural conditions which make the flight of birds possible. Space will not permit its reproduction here. A perusal of it will satisfy the critical reader that the undevout ornithologist, no less than the undevout astronomer, is mad.

The Flight of Birds

The instincts of the lower animals form an exhaustless field for the investigations of the teleologist. A single instance must close this chapter—the bee's construction of a honey cell. The equilateral triangle, the square, and the regular hexagon, are the only regular figures which can be joined together in the same plane without inter-

Instinct

stices; and of these the hexagon includes the largest space in comparison with the extent of the inclosing lines, since the proportion of area to periphery increases as the polyglon increases in the number of its sides. The bee's cell, it is found, assumes the form of an hexagonal prism. The determination of the form and inclination which must be given to the partitions closing the bottom of the cells is a much more difficult problem. Reaumur proposed to König, pupil of the celebrated Bernouilli, the solution of this problem: "To find the construction of an hexagonal prism terminated by a pyramid composed of three equal and similar rhombs (the whole of given capacity) such that the solid may be made with the least possible quantity of materials." This was requiring him to determine the angles of the rhombs that should cut the hexagonal prism so as to form with it the figure of the least possible surface. "Maraldi," says Mr. J. Hunter, an eminent authority, "had pre-

The Bee or his Maker a Mathematician

viously measured the angles of the rhombus and found them to be 109° 28′ and 70° 32′ respectively; but König was not aware of this until after he had solved the problem, and assigned 109° 26′ and 70° 34′ as the angles, when he had sent him the 'Memoirs of the Academy of Science' for 1712, containing Maraldi's paper; and König was equally surprised and pleased to find how nearly the actual measurement agreed with the result of his investigation.'' [1]

"The measurement of Maraldi," continues Mr. Hunter, "is correct, and the bees have, with rigorous accuracy, solved the problem, for the error turns out to be in König's solution."

Is not this a satisfactory proof that the maker of the bee is a mathematician?

[1] *Encyclopædia Britannica*, Ninth Ed., Art. "Bee."

CHAPTER XII

A THEISTIC ARGUMENT RESTATED[1]

The Two Factors of Experience

EXPERIENCE, or knowledge by the senses, furnishes us with innumerable instances of the uniform succession of given events. This is all (if so much) that the senses tell us. Criticism of this apparently simple and unitary experience might develop the fact that it also is capable of analysis, the events alone being given by the senses, while the temporality or succession is contributed by the mind. The temporality is none the worse for this parentage; but for the purposes of this treatise I may pass over this ultimate analysis. It is worth while to notice, however, that the most primitive sensations cannot become available as elements or units of intelligible experience until some mental factor is added: the empirical and

[1] If any one should choose to designate the principles and method of this chapter as essentially Lotzean, he would not be very far wrong.

the transcendent, the product of the senses and the product of the intellect, are bound up together in the units of true experience.

The Causal Judgment

The ordinary reflection of everyday life uniformly develops the notion of an inner connection, commonly denominated causal, between many of these regularly recurring antecedents and consequents. This is also in obedience to a mental demand, namely, the demand for a *ground*, that shall sufficiently explain this uniform temporal succession. This idea of an inner causal connection between events is often generalized in the judgment, "Everything has a cause."

Rational Truths

This proposition is evidently too broad. For, *first*, there are rational truths, indisputably valid, like those of mathematics, which, even when by analysis a better understanding of them can be gained, are produced by no cause. Certainly, at least, not until we reach the last and highest reaches of inquiry in a sober ontology, does any demand press upon the mind for a further

elucidation or explanation of self-evident and necessary truths. They appear self-sufficient. But, *secondly*, not even every actual existence requires an act of causation to account for it. It is only the *changes* which take place in the realm of the actual that require a cause. The mere "being" of any existence is legitimately explained when it is regarded as completely unconditioned, and hence eternal. When by examination of the characteristics of a given "being," it is discovered that it is impossible that its existence should be unconditioned, inquiry after its origin begins. But all such inquiries must end in the recognition of some unconditioned, *i. e.*, uncaused, being. The little boy who inquired of his mother, "Who made God?" may be pardoned, and even regarded as a nascent metaphysician; but the grown man who gleefully propounds this conundrum to the theist but creates suspicion of his moral earnestness and sanity, and lends another

The Unconditioned and Uncaused

support to the Psalmist's conclusion that the atheist is a fool. The *infinite regress*, it is clear, rests upon a fictitious universal: for the conditioned we must supply conditions, for the caused, causes. But reason rests finally only in the Unconditioned and Uncaused, raising no further demand.

The Infinite Regress Once More

Further: it can be shown to be incorrect to attribute a given change or event to a single cause. Even Hamilton and the Scottish school saw and expounded this clearly enough. It would imply that one causal antecedent could by its own agency produce out of itself a sort of ready-made effect, which could then be *detached* and *transferred* to a second being through empty space.

Changes Not Due to a Single Cause

In the application of the causal judgment to the phenomena of experience, we do not actually fall into this mistake. We recognize the fact that the effect which a given antecedent, A, produces, is not brought forth at all, except as A stands in a perfect-

ly definite relation, x, to a second reality, B. The effect, therefore, clearly does not depend upon a *discretion*, so to speak, lodged in A, but (1) *can* be produced only when the condition of the definite relation to B is fulfilled, and (2) *must* be produced when this definite relation exists.

Moreover, the effect varies as A sustains the definite relation, x, to B or C or D. The effect is, therefore, very obviously dependent upon the joint natures of A and B, or A and C, or A and D; and B, C, and D are just as much entitled to be considered causes as A. Locke's phrase, "passive power," was not a contradiction in terms, but his mode of recognizing what passivity is; in fact, to transform it into activity. The "active power" which appears to be self-generated by the agent is after all induced by its relation to something else: the "passive power" which appears to be induced by the action of another agent is after all the proper self-action according to law of the being

"Passive Power"

we regard as patient. "Agent" and "patient," "active" and "passive," are hence superficial distinctions according to appearances, but have no sufficient real or metaphysical difference.

Once more: when for the definite relation, x, between A and B is substituted another definite relation, y, the effect again varies. On the basis of all that has gone before we may now formulate the dual law of variation in the operation of causes, simple enough but not always attended to, namely, that effects vary (1) according to the nature of the beings (A, B, C, D, etc.) which stand in relation, and (2) according to the changes in the characters of the definite relations (x, y, z) in which they stand.

Dual Law of Variation

Finally, we must not omit to notice that every effect is *reciprocal*, that is, (1) it consists in some change in both of the coöperating agents, and (2) as a necessary consequence the relation between them is modified. Both expend: both receive: neither

Reciprocity

remains in the strictest sense the same: both the terms of the relation having changed, the relation itself alters.

Linguisitic Usage

Let us now look at some familiar illustrations of these principles. The linguistic usage of everyday life, or even the idioms which have become imbedded in language, both of which vary, often in a contradictory manner, as we pass from one human tongue to another, cannot be relied upon to correspond with scientific accuracy to this metaphysically exact description of the true relations of causes and effects. Language is not always logical: much more rarely is it cystallized metaphysics. Often the entire ground of an effect—as vegetation—is found in a single cause—a grain of corn; and the coöperating causes—moisture, heat, soil—are represented as conditions. This is arbitrary, and varies with the point of view of the speaker; for one scientist will speak of the corn as the cause, and of the moisture, heat, and chemical constituents of the soil as

the conditions; while another, just as consistently, inasmuch as it answers his purpose of intelligibly describing phenomena, will designate the soil, water, and heat as the causes of plant life, while the seed is regarded as a passive something upon which the efficient causation of these agents is exercised. We know, of course, that the soil is exhausted by the crops raised upon it, whence arises the necessity for the scientific rotation of crops in all farming worthy of the name, and for the renewal of the soil by the application of various fertilizers. But sometimes the total observable effect is confined to one of the coöperating agencies, though the other in every case really undergoes some change. In this case, the latter is commonly regarded as an "agent," as "cause," as "active," as "efficient," since it exhibits no change; while the former is named "patient," "effect," "passive," "object," since the observable changes are confined to it. Of course, as we have

abundantly seen, all these distinctions are, as matter of objective fact, unjustifiable and untrue.

Two Problems

Now in every event there are really *two* things to be explained: (1) its character or "content," namely, why this particular effect, and not some other, follows; and (2) the much more profound and difficult and hitherto almost unsolved problem of how it is possible, or why it is necessary, for anything whatever to happen simply because two distinct elements stand in a given definite relation. The first comparatively elementary problem has doubtless been satisfactorily solved in what has already been said with regard to (1) the changing characters of the elements that may stand in relation, and (2) the varying relations in which they may stand. But we do not yet understand how it is possible or why it is necessary that one thing should act upon another at all. We now inquire not how or why *this* cause produces *this* effect, but why *any* cause produces *any*

The First

The Second

effect. Or, if some effect is assumed by our very use of the term cause, we must rid ourselves of this entanglement of the wilderness of language, which, refusing menial offices, is forever rising up with its bludgeon to dash out the unwary metaphysician's brains. To dodge this blow, let us once more alter the statement of our problem. Why are phenomena concatenated and related and interlaced and all bound up together at all? Why is not everything isolated? Or, if their coexistence involves some sort of relation, why do they not simply continue forever standing in this relation, whatever it may be? Why should these coördinate and coexistent relatives take on the character of antecedents, of causal antecedents, and straightway beget a consequent, which is not content to exist as a consequent, but has changed both of the antecedents and altered the relation between them? Why should this kind of thing go on continually throughout the universe,

Full Statement of the Problem

so that all its widely separated phenomena are linked together in one vast system of changes, which we can designate only as the universe—namely, *ad unum versum*, that which is turned back into one. Why should it be true (1) that the total state of this universe in any moment is the total outcome of its total state in the previous moment, and that (2) while in a sense the same, the whole differs from moment to moment, rolling on in endless cycles, in comparison with which the mythological parallel of the stone of Sisyphus is but child's play? Why should not rather the whole vast machine stand stock-still, forever fixed in a given set of crystallized relations? How or why is it possible or necessary that any change or flux, and a vast and almost illimitable system of changes and fluxes according to law, should set in and be maintained? The cause of change, this is what we seek, and this is the problem we shall now attempt to solve.

In the opinions of the unsophisticated,

and even in scientific treatises, we are told of the "passing over" of an "influence" from one element or agent to another (*causa transiens, influxus physicus*). Many seek thus to persuade, or do really deceive, themselves that efficient causation is explained. Let us see if the explanation explains.

Causa Transiens

At once two fatal objections to this sapient suggestion may be offered: (1) it is not possible to define what it is that is here represented as "passing over" from one agent to another; and (2) if this definition could be given, it would still remain unintelligible how causation actually takes place. Having followed Descartes's advice to analyze our difficulties into simpler parts, when possible, we may seek to realize the force of these two objections to this plausible explanation.

Two Fatal Objections

1. If we regard that which "passes over" as a real element, *c*, which detaches itself from *A* and attaches itself to *B*, this seems a possible way of construing to our imag-

The First

ination, if not to our intellect, the process of causation. It indeed describes accurately many apparent effects produced by the elements of nature through this method of behavior. When by evaporation water (c), with all its properties, passes over from the earth (A) to the atmosphere (B), the effect produced is that these aqueous properties disappear from the earth, which dries off, and appear in the atmosphere, which becomes damp. This is not, however, a true case of efficient causation. It is a mere transfer of the water from the earth to the atmosphere. If that which passes over is regarded as a "state, "influence," "efficiency," "force," *i. e.*, something which cannot exist independently, then it remains true that qualities cannot exist separately from the things to which they belong. A "state," "influence," or "force" can never be detached from the agent or element A, so that it may exist even for an instant between A and B as an independent state, altogether

separate from any element, or as a state by itself, and then attach itself to *B*.

2. But if this passing over of a state from one element to another could be made intelligible, we should still be unable to understand the familiar but miraculous process of efficient causation. The only result would be that *c* would be removed from *A* to *B*, and the real difficulty, why *B* must straightway begin to perform on that account—that is, how *c* could produce an effect in *B*—would remain as unintelligible as ever. As before observed, the transfer of an element from one point to another, as of the match from the box to the pile of shavings, may often enough be observed, and frequently is an indispensable condition, without which no change would take place, the shavings failing to ignite without the contact of the lighted match; but this does not explain efficient causation, which begins only after the transfer has taken place. **The Second**

The philosophical doctrine of occasional-

Occasionalism

ism sought to escape all these difficulties by altogether denying the existence of efficient causation in nature. Since it is clear that efficiency cannot pass from one element to another, the occasionalists taught that this interpretation of nature ought to be given up, since it is unthinking, meaningless, and absurd. The course of nature must then be considered simply as a temporal succession of independent events, each of which is only the occasion, not the cause, the signal, not the agent, for the happening of something else. Without the agreed-upon flag or light displayed at the railway station, the engineer would not stop his train. But nobody supposes that the flag or light efficiently brings to pass the stoppage of the engine. According to occasionalism, then, there is no causal nexus between any two changes or events whatsoever: nothing ever efficiently brings to pass anything else.

Its Special Value

Now, in some sciences occasionalism evidently has a special value, namely, when

it serves the purpose of restraining the inquirer from directing fruitless efforts toward a region which can be shown to be beyond investigation according to the methods of that science. The rise of the Baconian philosophy, and still more recently of the Positivism of Comte (which regards all causes as inaccessible and beyond the domain of true science, which must therefore content itself with formulating the mere laws of the succession of phenomena), has imposed some restraints upon the arrogancy and wildness of the scientific imagination, inducing modesty and calmness, even though the systems of these philosophers must be viewed as shallow and false metaphysics. Still, the suggestion of occasionalism serves a useful purpose, as intimated above. For example, when psychology attempts to explain the interaction of soul and body; how a change in bodily condition, as the vibration of a nerve, can possibly effectuate that state of consciousness which we call a sensation;

Interaction of Soul and Body

or how a change in the states of the soul, as the "putting forth" of a volition, can possibly move the mass of matter which we call the body, and thus introduce a series of changes into the external world itself—the soul becoming a true first cause: these are questions which psychology as a special science cannot answer. The problem must be turned over to the general science of metaphysics, which, in explaining how any element whatsoever can exert causal efficiency upon any other, will have also told us how the particular agent the soul is able to influence the body, and *vice versâ*. The interaction of soul and body is, however, one of the best examples of the intellectual difficulties which must be surmounted in reaching an intelligent solution of the problem of efficient causation.

The Problem

As an example, it possesses these decided advantages: (1) that every mind instantly recognizes in it the precise nature of the difficulty to be overcome, and (2) that from

time immemorial, since man began consciously to direct his attention to the mysteries of his own complex nature, and particularly since Descartes exactly formulated it as *the* business of modern philosophy, all philosophers have recognized it as a problem awaiting satisfactory solution. But, in truth, the interaction of soul and body is not itself a distinct problem, to be separately solved by a psychological explanation, but is only a single instance of the interaction of distinct elements, to be explained by a general metaphysical solution of how it is possible that any individual element whatever should exert a causative influence upon any other. There is doubtless a science of pomology, and pomologists may be very learned and useful people in their way, but Sir Isaac Newton is not to be reckoned as a member of this guild. When he lay in his garden and saw that traditional apple fall, he did not seek an explanation by means of recondite researches into the nature of apples.

He betook himself to a consideration of the principles of general physics, and thus discovered and promulgated the law of gravitation, leaving to pomologists the task of perfecting their own important science. Similarly, psychology, warned by the hypothesis of occasionalism off the forbidden territory of the causal interaction of soul and body, has busied itself with working up the actual parallelisms between bodily and mental states, whether bodily or mental state were the antecedent. This is the only work it could do.

Occasionalism Insufficient

But occasionalism is itself an insufficient explanation of the general metaphysical problem, and needs itself to be explained. Until it can point out exactly how an event, *a*, can become the signal or occasion of a distinct event, *b*, it cannot be received as having penetrated the unknown land of efficient causation.

God

This demonstration has always been attempted by ascribing efficiency to God as

the real ground or cause of these reciprocally conditioning elements and events. From the isolated, finite, individual, *A*, there could never proceed a conditioning influence upon another isolated, finite, individual, *B;* only God, as the sufficient ground of all things, could supply these sufficient, reciprocal, causative influences.

Two Hypotheses

After this Columbus-like voyage of discovery, we are now getting in sight of land. Still, two hypotheses are possible at this juncture. Since God is the immediate Author of all the changes that take place in individual entities, it may be said that, as he is omnipotent, he may arbitrarily connect with *a* the consequence, *b*, and with a second precisely similar *a* the consequence, *c*. But the uniformity of nature, or the falling out of consequences according to law, sufficiently refutes this hypothesis, and such arbitrary and unregulated interposition of the deity has found no philosophical defenders.

Pre-established Harmony

The second hypothesis is the celebrated Leibnitzian doctrine of preëstablished harmony, according to which the entire course of world-history has been preadjusted. Since it cannot be affirmed that the machine of the universe does stand stock-still, it may be at least maintained that the whole schedule of its apparent coördinations through causal efficiency has been fixed from the beginning. In the particular case of the interaction of souls and bodies, out of a practically infinite number of souls and a like number of bodies, the deity joined together that soul and that body in which all the bodily changes (nerve vibrations) would be perfectly mirrored in the soul (sensations, percepts) and all the states of the soul (volitions) would be perfectly responded to by the body (external physical acts). Leibnitz's famous illustration is that of two clocks, constructed exactly alike in all particulars, so that, though each is entirely independent of the

other, both always indicate exactly the same time.

Leibnitz's Failure

But the absentee God of preëstablished harmony is no more efficient than the absentee God of common deism. Leibnitz's clocks fail to explain, for the machinery of the clocks is able to run at all (produce effects), and to run together, only because it conforms to principles of fixed mechanical causation according to law, and so begs the question by assuming causation according to law, *quod erat demonstrandum*. "But," asks an inquirer, "cannot the deity do as much as a clock-maker—make a machine that will run by itself?" This inquirer forgets that every man-devised and man-made machine, however simple or however complex, equally involves harmony with, and obedience to, a previously established and mathematically definite system of mechanical causation. What could the clock-maker do without this? How does the universe-maker sustain this system, without which

his world falls to pieces and comes to chaos and nothingness? The abysses of this question cannot be illuminated even by so brilliant an illustration as Leibnitz's twin clocks, since the system of mechanical causation needs itself to be sustained.

Hypothetical Harmony

Another theory teaches only a universal, hypothetical harmony. God has only determined, according to this doctrine, that if a certain change, *a*, occurs in the thing, *N*, then a certain other change, *b*, shall always happen in the thing, *M*. This also is *petitio principii*. For if the individual entity, *M*, is to have the change, *b*, whenever the entity, *N*, is affected with *a*, then *M* must somehow become aware, so to speak, of *N's* being affected with *a*, in order to distinguish it from the case of *a's* absence—that is, either the entity, *M*, or its quality, *a*, must somehow produce an effect in *N*, which, once more, is the very thing we are trying to understand.

Concursus Dei

Finally, the *concursus Dei*, or constant

assistance of God, is asserted, by which it is brought about that a given effect, *b*, always follows its cause, *a*. Now, if this hypothesis is meant to be an immediate appeal of the case to the realm of the inexplicable and supernatural, perhaps it might be permitted to pass on the ground that God's ways are not our ways, and that the deity can do whatever he will. But then we abandon the task philosophy has set itself. Considered as a philosophical explanation, the doctrine of the *concursus Dei* does not eliminate the notion of efficient causation, but contains it twice over. For that God may attach every effect to its cause, every *b* to its *a*, and every *d* to its *c*, it is necessary that *a* and *c* should exert some effect upon God, and that *a* affect the deity differently from *c;* and then it becomes necessary for God to respond in one way upon *a* to produce *b*, and in another way upon *c* to produce *d*. And so all attempts at explanation inevitably lead to the *circulus*, for

we are asking for the cause of causes, the *causa causarum*, which assumes the point at issue, whenever even the deity is made to act upon *substantive entities which are independent of himself*.

"Things" If, therefore, efficient causation, or causal interaction, is to be explained, the independent, isolated existence of self-subsisting entities called "things" must be denied. The universe of existing, finite "things" is in an absolute sense *one*, and only in a relative sense *many:* in this unitary world, causal interaction does not alternate with inaction, but changes and effects appear as individual forms within the one sphere of all-embracing and efficient causation. All "things" are dependent and relative realities or existences. A state *a* which is an affection of *A* must likewise be an affection of *B*, without any passing over of any sort. In other words, every particular "thing" is nothing more nor less than a specific result of the definite energizing of the Infinite One ac-

cording to laws which he has himself ordained, permanently maintained throughout finite time, or begun and suspended at his will. The preservation of the universe, or its existence from moment to moment, is a continuous and immediate divine act. "My Father worketh hitherto." A real unity in a Person underlies the phenomenal unity of the world, and justifies the assumption that it is a universe. "Intelligence endowed with will," says Kant, "is causality."

The Infinite Transcendent and Immanent

This Infinite One is both transcendent and immanent. He is transcendent because his being does not consist of the sum of the finite existences which he produces. Nor is he the "stuff" from which dependent things are made. They are dependent; he is the only independent and absolute Person: in no sense whatever does he depend on them or realize himself through them, as every form of pantheism must hold. He is immanent, as the Hebrew and Christian Scriptures teach, because he is the omnipresent

The Absolute Person

and ceaselessly operating Power through whom all finite things exist. Nor are we in the least danger of slipping into pantheism. For pantheism denies the personality and freedom of God, and consequently the true personality and freedom of man; the distinction between good and evil, of course, disappears also. On the other hand, when we accord independent self-subsistence to "things," we have unwittingly granted a postulate which logically leads to materialism and atheism. This is the matrix from which the atheistic tendencies of much modern physical science really proceed; and, in contending for a so-called "realism," whose consequences they do not themselves fully apprehend, many Christian philosophers[1] have unconsciously permitted their own thought to be saturated by a naturalism which is really atheistic. Not "substance," dead, motionless, without predi-

Self-subsisting Things

[1] As Dr. Samuel Harris in his "God: Creator and Lord of All."

cates, though itself the seat of all properties, the unknown and unknowable support of all that is known, unsupported and inexplicable itself and explaining nothing; but "action," a living fountain of exhaustless power, is the essence of being, as maintained alike by the best physics and the best metaphysics. That which simply "is," and does nothing, is for us as if it were not. It is nothing.[1] "Pure being=nothing." Every

[1] Dr. James Ward, professor of philosophy in the University of Cambridge, England, and author of the article "Psychology" in the *Encyclopædia Britannica*, thus speaks of "substance" in his latest work: "What, then, is the source and the validity of this conception of an unchangeable substratum as applied to things? All that we know of anything resolves ultimately into changes that it produces in other things or undergoes through them. With different things these changes are different, and so we attribute to each definite properties. And, but that such analysis seems inexhaustible, we might arrive at length, as in thought we do arrive, at the bare position [or being] of this or that without anything to distinguish one thing from another. Into such a *caput mortuum* material substance always has, and, we may safely say, always will, tend

"thing" gets itself attended to, not by virtue of its bare existence, but by virtue of what it accomplishes. The atom is not inert "substance," but a center of force. Matter in its constitution is dynamic. Will is the only fountain of power of which we have knowlege. Will belongs to persons. "God hath spoken once; twice have I heard this; that power belongeth unto God."

The argument of this chapter conducts to but a single attribute of the deity—his uni-

to resolve itself. We cannot with propriety call it real or actual, for real and actual, as Lotze has pointed out, are predicates, and that is just what substance can never be. The changes which constitute the whole of our direct experience of things can, then, in no way be explained by this bare potentiality of everything and actuality of nothing. Science generalizes these changes into a system of laws; but an unchangeable, indeterminate substratum will not account for determinate laws of change, nor they for it. The only conception that is of any avail here is that of determinate substances or things, and this at once brings the category of causality to the fore, and enables us, instead of saying, No causality without substantiality, to say, No substantiality without causality. This change of front

versal causal efficiency. I have developed partially the metaphysic of nature. The metaphysic of ethics and the philosophy of religion and the theory of knowledge are the necessary complements of this presentation: from all these sources may be constructed a profounder system of natural theology than the past has produced, in which God shall appear as the only Perfect Person.

philosophy owes to Leibnitz, and has seen no reason to abandon since. A world of such determinate things, in orderly interaction, may well lead our thought forward to a Supreme Principle that maintains it all. But such an *omnitudo realitatis*, or self-subsistent Being, is the very polar opposite to matter, the equivocal substance of Descartes that only gives content to the empty extent of space; and to matter, the phenomenal substance of Kant that only adds permanence to the empty extent of time. . . . We may conclude, therefore, that this category of substance is not an element in experience, whether individual or universal. It answers to nothing real, but is simply a logical residuum, *τὸ ἄπειρον*. So long and so far as we can determine we have form; and form is essentially causal. The residuum at which for the time we halt is matter, the determinable, but as yet, for us, undetermined."—"Naturalism and Agnosticism: the Gifford Lectures Delivered before the University of Aberdeen in the years 1896–1898," II. 192–195.

CHAPTER XIII

OF THE KNOWLEDGE OF "THINGS"

The Organic Sense

ANY one who should accidentally prick his hand with a needle or a thorn would probably agree without hesitation that the resulting pain was wholly an experience or sensation of his own. He might make no distinction between body and mind, and would regard any injury to the organism as producing what he would doubtless describe as a bodily pain. Without stopping at present to inquire whether this description would be scientifically exact, we may be sure that no one would think for a moment of ascribing any experience of pain to the needle or the thorn; nor would he suppose there was in the one or the other any change corresponding to the experience of pain in the injured member. Drawing a broad line of distinction between the self, considered uncritically as made up of body and mind, and the world beyond and independent of the body,

the painful experience would be regarded as belonging wholly on the self-side of the line, and as attaching in no sense to anything on the world-side of the line. All persons would agree without debate that all our experiences through the *organic sense*—if this name may be applied to the nervous apparatus, diffused throughout the body, by which we are informed of injury to the organism—are wholly *subjective*, that is, they belong to us, and not to the object which produces the wound.

The Sense of Temperature

We may, however, within the general organic sense, distinguish specifically the *sense of temperature*. Suppose one were thoughtlessly or ignorantly to pick up a glowing coal of fire. Is the coal hot? or is the thoughtless person, who has taken it into his hand, hot? Perchance in the other hand he may hold a lump of ice. Is the ice cold? or is the holder cold? To be sure, the physicist might reply that neither is cold; that, indeed, there is no such thing as cold, since

cold is only the comparative absence of heat. All bodies possess some heat, not excepting ice. To satisfy the physicist we may agree that the lump of ice extracts a certain amount of heat from the hand while in contact with it, this being evidenced by the fact that the ice partially melts. But still the query may be put, Is the ice cold? or has it only imparted a sensation of coldness to me, lowering the temperature of my body through the extraction of a portion of its animal heat? Undoubtedly the latter is the true answer to the question. If one will reflect for a moment, he will find himself obliged to concede that the glowing coal, in the one case, produces a sensation of heat in the one holding it, and the lump of ice, in the other case, produces a sensation of cold. The fire is not hot; the ice is not cold; these are only organic sensations of temperature produced in me while I am in contact with the fire or the ice. The case is not quite so plain as the one first adduced; indeed, it is much

more opposed to our habitual ways of thinking and speaking than the example of the needle or the thorn; but, on the whole, perhaps all will agree that our experiences through the sense of temperature are entirely subjective. And, if the reader has journeyed with me so far, it is hoped that he will not desert the company, even though the road should lead through a strange territory, in which things are no more what they have always seemed to be.

Subjectivity of Taste

Let me now venture a step further, and select one of the senses numbered among those commonly designated the "five senses" of man. If one should allow a lump of sugar slowly to dissolve in the juices of the mouth, can it be scientifically maintained that the sugar has any change or property like our experience of sweetness? No doubt it may be held that the sugar has properties which enable it to impart to us the sensation of sweetness. But that is not now the question. Unquestionably nobody in his right

mind would undertake the correction of the common forms of speech, descriptive of this and similar experiences through the senses, on the ground of their lack of conformity to scientific truth. This would be as quixotic as an attempted modification of the current phraseology concerning the rising and the setting of the sun. But all of these admissions are beside the main issue. The sugar may indeed be a cause, but the effect is the sensation of sweetness in him who tastes the sugar. And so it is with all the tastes. Every taste is a subjective experience; and we have no ground for believing or conjecturing that the objective cause of this subjective experience resembles, in any degree or after any manner, the effect produced in us. In fact, unless we are prepared to admit that sugar possesses consciousness, we know that this cause must be totally different. It would be just as true for the man who is under the influence of whisky to say that the whisky is drunk as it would be for one who is under

the influence of sugar to say that the sugar is sweet. If whisky makes one drunk, just as certainly sugar makes one sweet; both are subjective states produced by introducing a foreign substance into the organism. If it should be held that sugar is sweet in itself, while whisky only produces drunkenness in him who drinks it, a pertinent inquiry would arise, What is the state of the case when the two are mixed and taken together? Of course to the mind unaccustomed to scientific discrimination and philosophic reflection all this seems absurd enough. But the more acute and thorough the analysis, the more profound will become the conviction that not only the *organic sense* and the *sense of temperature*, but also the *sense of taste*, yield only subjective experiences or states.

The Sense of Smell

If, now, we direct our attention to the *sense of smell*, we shall find it in precisely the same class with the sense of taste. Odors, no less than tastes, are effects produced in us; and if there were no noses, there would

be no smells. The external physical conditions for the production of a sensation of smell would exist exactly as they did when men were endowed with noses, but both the physiological condition or stimulus and the psychical reaction necessary to the existence of an odor would be absent. Any body that is smelled gives off infinitesimal particles, and when these gaseous exhalations fall upon the extremities of the olfactory nerves in the nose, the nerves are irritated, and, transmitting the irritation to the brain, produce in the possessor of that brain a sensation of smell. The nose and the nerves are an integral and essential part of the mechanism necessary for producing an odor. Without them the odor fails to come into being. The external body emitting gaseous particles may be regarded as the source or fountain of this whole movement, no doubt; but if this beginning were not complemented by a nose, with olfactory nerves, no odor would ever result. Similarly, if man pos-

sessed no other sense than that of smell, life would be reduced to a series of smells or succession of odors; no sights or sounds or tastes would diversify human experience. All variety would consist in differences of smell.

The Mechanism of the Body

Perhaps, now, before passing to the higher senses, it might be well to inquire into the mechanism of the body which enables it to transmit organic pains, differences of temperature, tastes, odors, and, as we shall see, sights, sounds, and touches. And as I have managed so far in this chapter to get along without the obscuring technicalities of physics, physiology, and psychology—the three sciences which, taken together, so supplement each other as to give a complete account of the phenomena under investigation—so I may attempt to compass the outlines of nervous physiology in the same manner. If we examine the body we find it subject to the same laws of physics and chemistry which obtain in those portions of

The Body an Intermediary

matter with which we have no such intimate union. And yet the body is infinitely more to us than any other lump of matter, inorganic or organic, weighing a hundred and twenty-five or fifty pounds. Philosophers have talked of a *tertium quid*, a third something—neither matter nor mind, but yet both—which should serve as a vehicle of communication between the mind and the body. Rejecting this conception as unsupported by evidence, we may yet hold that the body is the true *tertium quid*, which serves as the vehicle of communication between the mind and that external world which seems to exist independently of both the mind and the body. There is the I, the Ego, the Self; there is the body which is not, on the one hand, the I or the Ego, nor yet, on the other hand, is it the external world in exactly the same sense as other matter is; and there is the external world, not only external to the mind, but also to the body: the body is the true intermediary between the mind and the world.

Sensor and Motor Nerves

Inspecting the body closely, we discover in it two distinct sets of nerves serving different and, in some sense, opposed purposes. One set of these nerves is called sensor, afferent, or incarrying; the other set is called motor, efferent, or outcarrying. Along the lines of the former the external world delivers itself upon the mind; along the lines of the latter the mind delivers itself upon the external world. Along the sensor nerves travel the sensations; along the motor nerves travel the volitions. Sensation and will—these are the poles of human experience; their products are the materials with which the intellect does its work. From all parts of the body in whose surface are located what are commonly called the peripheral extremities of the sensor nerves, these lines of communication stretch to the ganglionic centers and thence to headquarters in the brain. From the brain to all parts of the body proceed the motor nerves, by which the movements of the muscles and members

The Body a Bridge

of the body, and of the body itself, are controlled. The body may thus be fairly likened to a great bridge having two roadways. At one terminus is the mind; at the other the world of matter. Along one roadway all the passengers are traveling in the same direction—from the mind to the world. Volitions take the motor roadway, control the bodily movements, and so project new factors into the world's progress: palaces, warehouses, manufactories, and churches; pictures, statues, epics, and operas; ships, railways, and canals—these are some of the results. Along the other roadway all the passengers travel in the same direction, too; but it is in the opposite one—from the world to the mind. All the vibrations which become sensations take the sensor roadway and a thousand messages of every variety and import are delivered to the waiting mind within, which is so marvelously endowed that it is able to assort and interpret them all. More of the wonderful functions of these

motor and sensor nerves will be brought out as we proceed.

The Sense of Hearing

I may now take up the higher *sense of hearing*. If there were no ears, would there be any sounds? Paradoxical as it may seem, this question must certainly be answered in the negative. If you were to ask the farmer, as he passes through field or wood at break of day, Where is the music? without hesitation he would answer, In the throats of the birds. But suppose one of the sweet songsters should be captured and placed under the exhausted receiver of an air pump. We might indulge the further supposition that the bird could support life for a short time in this situation. The vocal organs might be in perfect condition; the appropriate motions might be made with the utmost precision; and yet we know that no sound would be heard. The atmospheric vibrations are physically requisite to the transmission of sound—are part of the necessary machinery for its creation, to speak

more accurately; and since there is a vacuum about the bird, no sound is heard, that is, no sound is made. But suppose the bird to be singing again in the forest. The atmosphere properly supplements the movements of the vocal organs of the songster. But the person walking in the forest is deaf! It makes no difference whether the deafness results from the accumulation of foreign substances in the external orifices of the ear or from the internal paralysis of the auditory nerve. In either case a part of the machinery necessary to the production of sound breaks down. Not only must the bird use its vocal organs; not only must the atmosphere do its work of transmitting motion; but there must be impact upon the tympanum of a perfect ear and consequent vibrations produced in the auditory nerve.

But again, we suppose the atmospheric waves breaking upon a responsive tympanum and the auditory nerve correspondingly

vibrating—at last there is a sound. Where is it? In the throat of the bird? No! In the atmosphere? No! In the tympanum of the ear? No! In the auditory nerve? No! In the brain? No! It is neither in the bird, nor in the surrounding atmosphere, nor in any portion of the body of him who hears—for all these are matter, and brain, as much as the atmosphere, is incapable of being the seat of sound. Where, then, is the sound? In the *mind!* Sounds are mental phenomena. They are elements of a consciousness, and without consciousness they have no conceivable existence, whatever may be the physical and physiological motions and changes which prepare for them. A sound external to the sphere of a consciousness would be as unintelligible as a toothache which nobody should have. How is the passage effected from the body to the mind; how are nerve vibrations or brain changes transmuted into phenomena of consciousness? Ah, there, if

Where is the Sound?

natural realism or dualism be true, is one of the ultimate, inexplicable facts. The passage, it must be allowed, is effected, since we have the experience in consciousness, and the cause is supposed to be matter in motion: the mechanical conception of the world admits no other. The transmutation, since the dualistic hypothesis requires it, takes place. How, no one has ever yet told. Du Bois-Reymond says: "If we possessed an absolutely perfect knowledge of the body, including the brain and all changes in it, the psychical state known as sensation would be as *incomprehensible* as now. For the very highest knowledge we could get would reveal to us only matter in motion, and the connection between any motions of any atoms in my brain, and such unique, undeniable facts as that I feel pain, smell a rose, see red, is thoroughly *incomprehensible*."[1] Professor Tyndall asserts:

[1] Lecture on "The Limits of the Knowledge of Nature."

"The passage from the physics of the brain to the corresponding facts of consciousness is *unthinkable*."[1] And Professor Huxley says: "How it is that anything so remarkable as a state of consciousness comes about as the result of irritating nervous tissue is just as *unaccountable* as the appearance of the Djin when Aladdin rubbed his lamp."[2] "Incomprehensible," "unthinkable," "unaccountable," are the terms applied by these eminent physicists to the most commonplace facts of daily and hourly experience when their explanation is sought in the terms of a science which assumes the dualism of matter and mind. The contradictory exclusiveness of thought and extension, having been put into mind and matter at the beginning by Cartesian definition, it ought to excite no surprise that at the frontiers of physics and psychology they refuse to interpenetrate. Since the facts are undeniable, the only

[1] "Fragments of Science," p. 121.

[2] "Lay Sermons."

scientific course open to those who discover or allow the "incomprehensible," the "unthinkable," and the "unaccountable," is to revise the Cartesian definitions whence this signal of "no thoroughfare" arises.[1]

A Fresh Illustration

If there is yet a lingering skepticism in the mind of the reader, let the illustration be varied. One may hear himself speak or sing. When I both sing and hear myself sing, when I am both the utterer and the recipient, is the sound in my mouth or in my ear? I must consent at once that there is not in my mouth or in any of my vocal organs anything like a sensation of sound. Vibrations of my own auditory nerves are in this case produced by the motions of my own vocal organs. And, as we have seen, no more in the vibrating nerves of hearing than in the moving organs of speech exists the resulting sound, but only in the mind.

In so simple a matter as the communica-

[1] See some general remarks in the "Preface" of this work, pp. ix–xi and xii, xiii.

tion of a thought by one person to another, there are at least five distinct steps or processes. These stages arranged in chronological order, and named according to the sciences in which their description properly falls, are, (1) psychical, (2) physiological, (3) physical, and then (4) physiological, and (5) psychical again. To communicate, I must first have a thought—an experience of the psychical order. If my thinker stops, my talker must also stand still. But I must further so control my vocal organs as to form the articulate sounds linguistically expressive of the thought. The thought, so to speak, has now passed out of the mind and has been committed to the body. This is a fact of the physiological order. The movements of the vocal organs in turn produce atmospheric vibrations. The thought passes out of the body and is committed to the custody of the atmosphere. We have at this stage literally "wingéd words." This is a fact of the purely physical order. The at-

Education

mospheric waves produce their appropriate effect in the auditory nerves of the listener. The thought is translated from the air into a human body once more, and a new fact of the physiological order is produced. Finally, the mind of the auditor becomes the recipient of the thought which originated in the mind of the speaker, or rather is moved to produce it afresh out of its own resources; and the series terminates as it began with a fact of the psychical order. Hence minds never come into direct contact with one another; and education, so far from being the mere shoveling of knowledge from one mind into another, as a cart might have placed in it a load of coals, is a process of intellectual quickening in which one mind enables another to repeat independently the processes of thought.

The Sense of Sight

As sensations of sound are generally dependent upon the vibrations of the atmosphere, though there may be other transmitting media, so *sensations of light* are in gen-

eral dependent upon the vibrations of the luminiferous ether, which is the specific stimulus for the optic nerve. These vibrations range from four hundred and fifty-one billions per second, producing the sensation of red, to seven hundred and eighty-five billions per second, producing the sensation of violet. The external, physical basis of color is clearly the different rates of vibration in the luminiferous ether; and the physiological basis is most probably the differentiation of the optic nerve into special fibers, responsive to different rates of vibration in the ethereal medium. Hence, physics teaches us that bodies have no color of their own, color resulting only from those constituents of white light which are not absorbed but reflected. But these reflected rays are but different rates of vibration in the ether, and these vibrations are the causes of vibrations in the fibers of the optic nerve, and these nervous vibrations produce sensations of color in our consciousness. Colors, there-

fore, like sounds, tastes, and odors, are wholly subjective.

Illustrations

But this subjectivity may be made more apparent in several ways. Such is the specific energy of the several nerves of taste, sound, and sight, that no matter how any one of them may be stimulated, each always gives its own appropriate response. The mind always experiences a sensation of sound whenever the auditory nerve is stimulated, no matter whether the stimulus be the normal one of atmospheric vibrations or the extraordinary ones of mechanical pressure or the electric current. Similarly, electrical stimulus and mechanical pressure so affect the optic nerve as to produce sensations of light. The violent concussion of a sudden fall causes the unfortunate person "to see stars"; and whenever the optic nerve is severed in a surgical operation, the patient perceives a flash of light. Thus clearly neither the external, physical stimulus, nor the internal, physiological stimulus

is light or color. The physical or extra-organic excitant is the vibrations of the luminiferous ether, and the physiological or intra-organic excitant is molecular motion in the optic nerve transmitted to the brain. This brain change is the final element in the physical and physiological series. And it makes no difference how this brain change is produced—by vibrations of the ether, by electricity, by mechanical pressure, or by scision—in any case the mind reacts with a sensation of color. Hence, colors are purely subjective. It is a common experience with persons who have had an arm or a leg amputated to feel, for a limited time afterwards, pain in the amputated member. This is easily accounted for. When the nerve termini in the "stump" are irritated, the mind interprets the resulting sensations as if they had originated in the natural nerve terminations in the missing member. It is the brain change, irrespective of its cause or source, which is the final condition of the psychical reaction.

Music and Pictures

Let us not, however, despise the music and pictures of the world because they are our sensations. "Sound and color are no worse," says Lotze, "because they are simply *our* sensations. They constitute in fact the exact end which nature was aiming at with its waves of ether and air, but which it could not accomplish by itself alone. To reach this end it needed soul, so that there might be realized through the action of the soul in sensation the beauty of shimmering light and of ringing sound."

Secondary Properties

It is now evident that heat, cold, tastes, odors, sounds, and colors are all effects produced in us—are, in a word, subjective. These constitute a very large section of what we commonly regard as the external world, and are usually designated by metaphysicians the *secondary properties of matter*. So far realists and idealists are practically agreed.

Touch

The touch is the only sense which has been supposed to give immediate and complete information of the so-called primary

qualities of external bodies—properties alleged to exist in the bodies precisely as they do in our cognition. But the distinction of primary and secondary qualities is untenable; and the same analysis we have applied to the other senses will convince us that touches are also dependent on nerve vibrations and brain changes, and are simply our sensations.[1] Of touch, and of so-called primary qualities, more will be said in a later chapter.

Within the range of the phenomena of sensation we have been discussing, however, there is sufficient ground for concluding the existence of independent reality.

Ultimate Grounds of Objectivity

The ultimate grounds of objectivity are not to be found in any supposed immediate recognition in consciousness of anything material whatsoever; but rather in the direct mental perception and distinction of two opposed series of purely mental experiences, which fall, of course, wholly within the limits

[1] Compare Bradley, "Appearance and Reality," Chapter I., pp. 11–18.

of consciousness. (1) The mind discriminates *voluntary* and *involuntary*, or *self-dependent* and *self-independent* series of experiences in consciousness—*e. g.*,, there is an essential difference between memories and sounds, though both are only facts of consciousness. Over the quality or the intensity of the sound I can exercise no direct control; the memory image I can ordinarily call up or banish at pleasure. (2) Mind originates effects, which report themselves back through sense, as when I write this sentence. The first and last members of the series are distinctly in consciousness, and the thought built into both identifies the last with the first, or certifies the dependence of the last on the first. What went forth as thought and will only, comes back as sensation, with the same thought built into it, and I know that I have projected myself into an independent region, unknown to me except as I gradually learn that I can operate upon it according to stable laws, and that it

in turn, producing effects according to law, can project influences within the sphere of my consciousness. In this sense, only, is there anything that may be styled immediate knowledge of a *non-ego*. Subject and object exist, and can only exist, within the unitary experience of a common consciousness. (3) Mind finds certain stable and uniform series of experiences which repeat themselves with insignificant variations in consciousness under similar conditions, as when I take the same walk on every afternoon, and behold the same houses, trees, etc., in the same order and with the same characteristics. (4) Other minds report identical experiences, and reality is recognized by the agreeing testimony of a society or community of minds.

These to me are sufficient proofs, and among the only possible proofs, of the existence of nonegoistic reality—*i. e.*, reality independent of me in its origin and character, though displaying itself within the limits, and

in the terms, of my consciousness. The nature of that reality still remains to be determined upon other grounds, and, in general, the solution of Hermann Lotze is satisfactory to my mind. None of these experiences carry us directly outside of the mind itself. The doctrine, however, is essentially realism, certainly not pure idealism; though of course the stubborn Scotch would not permit our classification with themselves. If asked to define a "thing" as a reality which, on this system, no one of the senses ever reaches as an external object, I should answer in the words of Professor Ladd, of Yale University: "The same psychical subject which reacts upon the stimulation of the nervous elements, in the form of various quantitatively and qualitatively different sensation-complexes [all of which are purely mental] constructs by its synthesizing activity, in the development of its own life, all the so-called 'objects of sense.'"[1]

A "Thing" Defined

[1] "Outlines of Physiological Psychology," p. 360.

What the nature of that reality is beyond (1) its necessary production by or dependence on deity, and (2) its uniform effects in us, according to law and independently of our wills, I need not further inquire until a later chapter on the "Theory of Knowledge."

Intellectual Formulation of the Law of Change

The physicist flexes, melts, vaporizes a body; the chemist analyzes it into its elements. The element may be subjected to further treatment. When sodium is warmed, the white, silvery mass becomes liquid, and, on increasing the heat and excluding the air, this liquid passes off in a violet vapor, which, under a still more intense heat, glows with a yellow light. On condensing the vapor, the white metal reappears. If the metal is thrown into water and becomes sodium hydroxide, its original features may still be recovered. These continuous, uniform, permanent activities, transitions backward and forward, according to law, and others like them, constitute all we know about so-

dium through the senses: the term always remains an empty word for all in whom it does not arouse such a group of coördinated sense-impressions. The senses inform us of the qualities and their changes; the intellect seizes the law and the limits; and these are two very essential elements in our recognition of an individual thing.

Weight

Sometimes "weight" is taken as a direct proof of the immediately perceived objectivity of matter, but (1) weight is not a property of a body *in se*, but is a relation which it sustains to the mass of the earth, variable with its translation to other masses, like the moon, the sun, Jupiter, etc.; and (2) when perceived by us it is a state of the tension of our own muscles, which, of course, resolves itself into our sensations.

Time and Space

Our limits forbid the consideration of the notions of time and space, whose full treatment belongs to treatises on metaphysics. Even Newton speaks of an absolute time, a conception which Immanuel Kant

could not entirely shake off, and which is sometimes seriously entertained in our own day. When we declare that the acceleration of a freely falling body is 9.810 meters a second, we mean that the velocity of the body with respect to the center of the earth is 9.810 meters greater when the earth has completed an additional 86,400th fraction of its rotation—a fact determined by the earth's relation to other heavenly bodies; though even astronomy, it must be remembered, does not supply an absolute timekeeper. It is quite impossible to see what intelligible meaning can be assigned to the notion of the "lapse" or "flow" of time, be it called "absolute" or what not, in a void freed of motions, sensations, and existence itself. This absolute time would be crystallized into the hard and fast stationariness of so-called absolute space itself.

A General Formula

At the close of an inquiry like the preceding, it might be held desirable, if it be pos-

sible, to frame a general formula which should exhibit the relations of physics, physiology, and psychology, as these sciences are connected in the foregoing scheme of reality—a formula which should at once secure the unity of their facts in the field of reality, and define their boundaries, or delimit their frontiers, in the field of investigation. To this end, suppose we designate the elements of experience when regarded as "bodies" or "things" by the letters *a*, *b*, *c*, etc.; when regarded as nerve vibrations and brain changes by the letters, *j*, *k*, *l*, etc.; and, finally, when regarded as facts of consciousness (or psychoses) by the letters *s*, *t*, *u*, etc. In these terms may be exhibited generally the truth of the following propositions:

Proposition I

1. Since *a*, *b*, *c*, etc., manifest themselves as *s*, *t*, *u*, etc., through *j*, *k*, *l*, etc., the materials of these three sciences, physics, physiology, and psychology, are so far not different but identical; the several sciences arising

as the uniform elements of experience are treated from different points of view.

2. The fundamental and immediately known series is *s*, *t*, *u*, etc., in whose terms alone either *a*, *b*, *c*, etc., or *j*, *k*, *l*, etc., can be known. (1) When *j*, *k*, *l*, etc., are assigned an existence independent of *s*, *t*, *u*, etc., it seems as if *s*, *t*, *u*, etc., were the effects of *j*, *k*, *l*, etc., and we become victims of an illusion in which it appears that brain changes are the causes of mental states, and physiological psychology strikes us as materialistic. (2) When *a*, *b*, *c*, etc., are assigned an existence independent of *s*, *t*, *u*, etc., it seems as if matter were wholly incommensurable with mind, and we are victimized by the illusion of the Cartesian dualism of thought and extension—the illusion of mutually exclusive mind and matter. But since we can never have an experience except in terms of *s*, *t*, *u*, etc., it is manifest that the difficulties connected with the interaction of soul and body are wholly of our own de- Proposition 2

vising in falsely constructing independent material series of *a*, *b*, *c*, etc., or *j*, *k*, *l*, etc.; and disappear when we persistently master and dissipate the foregoing illusions.

Proposition 3

3. When we are dealing with the relations of elements *a*, *b*, *c*, etc., among themselves, in the science of physics, it is evident that we may disregard their identity with *j*, *k*, *l*, etc., as brain changes, or with *s*, *t*, *u*, etc., as facts of consciousness; though, as a matter of fact they are thus identical, through elements *j*, *k*, *l*, etc., with elements *s*, *t*, *u*, etc. For purposes of physical inquiry it is possible to pursue the investigation of *a*, *b*, *c*, etc., in their mutual relations, by means, let us say, of the multiplied formulas and equations of dynamics, all the while entirely ignoring the fact that the changes occurring among *a*, *b*, *c*, etc., are not independent, but are all recorded in *s*, *t*, *u*, etc., by means of *j*, *k*, *l*, etc. When this method leads to the assertion of a false independence of *a*, *b*, *c*, etc. (or of *j*, *k*, *l*,

etc.), the illusions described in proposition 2 arise.

4. If we study the changes of *j*, *k*, *l*, etc., on their own account, we may still regard them as connected with the changes in *a*, *b*, *c*., etc.; but we may leave wholly out of consideration the changes in *s*, *t*, *u*, etc., except as these are subordinated to the purpose of discovering changes in *j*, *k*, *l*, etc. That is to say, in the study of the physiology of nerve and brain we still look back to physics, but we commonly ignore the interests of psychology as such. **Proposition 4**

5. If we deliberately study *j*, *k*, *l*, etc., in relation to *s*, *t*, *u*, etc., instead of in their dependence on *a*, *b*, *c*, etc., it is evident that we are investigating the same phenomena in another interest and from the other side, resulting in the science of physiological psychology. **Proposition 5**

6. If psychology is correctly defined as the science of the facts of consciousness *as such*, it is evident that its province is defined **Proposition 6**

by the words "as such," since "facts of consciousness" include the whole of experience and hence the sphere of science generally. But in psychology *s*, *t*, *u*, etc., come under consideration for their own sake and in their own relations, laws, changes, and ultimate implications.

This imperfect and provisional sketch will have served its purpose if it makes clear that despite the duality of subject and object within the sphere of consciousness, there is no dualism of mind and matter as mutually exclusive thought and extension; but, on the contrary, a simple identity of elements of one experience, whether studied on the one side in physics and physiology, or on the other in psychology.

CHAPTER XIV

PROFESSOR HUXLEY AND BISHOP BERKELEY

Was Huxley a Materialist?

Of the three eminent scientific authorities —Du Bois-Reymond, Tyndall, and Huxley —cited in the preceding chapter as standing in amazement gazing across the unbridged chasm between matter and mind, it is certain that Mr. Huxley, at least, was not unaware of the right scientific and philosophical solution of the difficulty. There is, perhaps, no epithet, save his self-chosen name of agnostic, that has been more generally applied to Professor Huxley than that of materialist. And this despite the fact that he has been at great pains on several occasions to explain that, if terms are used in their ultimate and exact connotation, he repudiated the accusation. What has lent most sanction to this materialistic charge is doubtless the fact that Mr. Huxley deliberately and uniformly preferred a consistently

materialistic phraseology for his scientific treatises, as being, he declared, least liable to misunderstanding and in most general use. "In itself, it is of little moment whether we express the phenomena of matter in terms of spirit," he says, "or the phenomena of spirit in terms of matter; . . . but with a view to the progress of science, the materialistic terminology is in every way to be preferred." However grievous an error this might have been for a professed philosopher, seeking to comprehend reality as a whole and in its ultimate terms, at present I raise no question on this point as a matter of mere scientific custom or convenience. As to the practical possibility of rewriting the whole body of science in "terms of spirit," one may well doubt. Certainly Professor Huxley neither had nor felt any special call to undertake the prodigious task, or even to inaugurate it. Better is it, possibly, to leave the scientific description of the processes and results of sense-perception to

psychology, and to continue in physics our common modes of speech, as Copernican astronomers still talk of the rising and setting of the sun. But Huxley was not led into mistaking the phenomenal language of empirical science for a mirror of truth and reality, as many passages of his works, presently to be quoted, abundantly testify. Without these express disclaimers, the philosophical incompatibility of agnosticism—of which term Mr. Huxley was the coiner—and materialism, as an ultimate explanation of reality, might have led candid minds to withhold judgment; in view of the explicit denials, it seems to me to have been a species of refined and excruciating torture to have gone on repeating this charge to the close of Huxley's life. I am clearly of opinion that Mr. Huxley cannot be classed as a materialist, and am glad to have this position doubly confirmed, first, by Mr. W. L. Courtney, the editor of *The Fortnightly Review*, who gives the estimate of Huxley as a philosopher in his August num-

ber for 1895; and again by a materialistic critic of Huxley, Mr. G. G. Greenwood, in an article on "Professor Huxley on Hume and Berkeley," published in *The Westminster Review* for July, 1895.

A Decisive Passage

But before examining the criticisms of these two reviewers, it may be well to cite at least one decisive passage from Mr. Huxley's own writings: "I understand the main tenet of materialism to be that there is nothing in the universe but matter and force; and that all the phenomena of nature are explicable by deduction from the properties assignable to these two primitive factors. That great champion of materialism whom Mr. Lilly appears to consider to be an authority in physical science, Dr. Büchner, embodies this article of faith on his title-page. Kraft und Stoff—force and matter—are paraded as the Alpha and Omega of existence. This I apprehend is the fundamental article of the faith materialistic; and whosoever does not hold it is condemned by

the more zealous of the persuasion (as I have some reason to know) to the Inferno appointed for fools or hypocrites. But all this I heartily disbelieve; and at the risk of being charged with wearisome repetition of an old story, I will briefly give my reason for persisting in my infidelity. In the first place, as I have already hinted, it seems to me pretty plain that there is a third thing in the universe, to wit, consciousness, which in the hardness of my head or heart I cannot see to be matter, or force, or any conceivable modification of either, however intimately the manifestation of the phenomena of consciousness may be connected with the phenomena known as matter and force.''[1]

Huxley's Idealism

Let us now take the *Westminster* reviewer first. Says he: ''Professor Huxley, addressing the 'untutored if noble savage of ''common sense,'' ' says [p. 308 of the essay on Hume and Berkeley], 'You thought that your sensations were properties of external

[1] ''Evolution and Ethics,'' pp. 129, 130.

things, and had an existence outside of yourself. You thought that you knew more about material than you do about immaterial existences'; and upon both these points the ignorance of the noble savage is held to be demonstrated."

Mr. Greenwood's Criticism

This is entirely too idealistic for the materialistic critic; to it he at once proceeds to make the usual materialistic rejoinder: "I have always considered that sound, *e. g.*, is an effect produced upon the brain by vibration through the apparatus of the ear, as smell is an effect produced upon the brain by external substances acting through processes so well described by Professor Huxley in the essay on *Sensation and the Sensiferous Organs*. I am happy, therefore, to think that I steered well clear of the absurd error of supposing that my sensations had an existence outside of myself." Steered clear, indeed! As if brain and body, ear and nose, and their connecting apparatus of nerves, were not as strictly "outside of myself" as

vibrations of air and all other "external substances." Brain can no more be a subject of sound than can air or ear. Sound is no more an effect produced in a brain by vibrations than it is an effect produced in a fiddle by a bow.

Huxley and Berkeley

Materialistic Mr. Greenwood now proceeds to identify the Huxleyan doctrine with the Berkeleyan. Can it be that the shades of Huxley and good Bishop Berkeley are now clasping hands in the invisible world, and shaking their sides in uncontrollable laughter as they point the finger of scorn at the poor, deluded materialists? Mr. Greenwood quotes from Berkeley[1] a passage which he declares has always been his despair. Let us read the passage: "It is acknowledged as the received principles that extension, motion, in a word, all sensible qualities, have need of a support, as not being able to subsist by themselves. But the objects perceived by sense are allowed to be

[1] "Principles of Human Knowledge," §91.

nothing but combinations of those qualities, and consequently cannot subsist by themselves. Thus far it is agreed on all hands. So that in denying the things perceived by sense an existence independent of a substance or support wherein they may exist, we detract nothing from the received opinion of their reality, and are guilty of no innovation in that respect. All the difference is that according to us the unthinking beings perceived by sense have no existence distinct from being perceived, and therefore cannot exist in any other substance than those *unextended*, *indivisible*, *substances* or *spirits*, which act, think, and perceive them."

Without stopping to criticise the exact form of this brilliant analysis of Berkeley's, though personally I prefer another statement, let us cling to our sole present purpose of noting how Mr. Greenwood proceeds to identify the Huxleyan doctrine with precisely this fundamental analysis of Berke-

ley's. Quoting again the essay on *Sensation and the Sensiferous Organs*, Mr. Greenwood finds that Huxley regards sensations as "immaterial entities." After considering the processes of the olfactory sense, Mr. Huxley writes: "Attend as closely to the sensations of muskiness or any other odor as we will, no trace of extension, resistance, or motion is discernible in them. They have no attribute in common with those which we ascribe to matter; they are, in the strictest sense of the words, immaterial entities." Later Huxley adds: "An immaterial substance is perfectly conceivable." Here our materialistic reviewer asserts Huxley's complete identity with Berkeley, and joins the battle. Listen to Mr. Greenwood: "Now here it is that I venture to join issue. I assert that no man can conceive a 'substance' which, being immaterial, has no extension, and therefore no form. *It is Berkeley's 'unextended, indivisible spirit.'* No idea can be formed of it in the human mind. It is,

The Issue Joined

in the words of Calverly, 'a thing imagination boggles at.' [Note here Mr. Greenwood's absurd confusion of *imagination* and *conception* as tests of reality—a distinction carefully observed by Huxley in the language following.] Professor Huxley admits that he 'cannot conceive four dimensions in space,' though he has known men 'who seemed to have no difficulty either in conceiving them, or, at any rate, *in imagining how they could conceive them*.' I trust, therefore, he will be tolerant of a poor 'common-sense philosopher' [*i. e.*, in this case a confessed materialist] who finds it utterly impossible to conceive an immaterial substance. . . . I confess that hitherto I had *imagined* [!] that a sensation could have no *conceivable* [?] existence apart from the brain any more than motion can have a conceivable existence apart from the thing which is moved; and I confess that I had conceived the brain to be material.''

On this jumble of materialistic incoheren-

cies it were well to let the curtain drop. But this sentence of Mr. Greenwood's climaxes the charge against Huxley, carrying him as an idealist far beyond Berkeley: "Berkeley admitted that we can have no idea or notion of a 'spirit'; yet here is Professor Huxley hinting that we are very poor creatures indeed if we are unable to conceive an 'immaterial substance.'"

Mr. Greenwood's Conclusion

I pass now to the other reviewer, Editor Courtney, in the *Fortnightly*. He takes up the question of the materialistic nomenclature adopted by Huxley, to which I have adverted, and declares: "Shall we use the materialistic notation, or shall we employ that which has become familiar to us, partly through the work of Descartes, partly through the ingenious and unconquerable analysis of Bishop Berkeley? And now we approach one of those points on which Professor Huxley speaks with a conviction which is, to say the least, surprising. No one has seen more clearly than he how un-

Editor Courtney

answerable is the analysis of Berkeley. No one has explained with greater lucidity the irresistible character of that ultimate certainty [the *cogito ergo sum*] to which Descartes was led in his famous 'Discourse.' Whatever else may be doubtful, there is one thing on which rests no shadow of doubt—the consciousness that '*je pense*,' the reality of which is not only evidenced in every part of our knowledge, but is also the most fundamental fact of which we are aware. Everything can be translated into the terms of consciousness, being, in ultimate analysis, nothing but conscious states. Nevertheless, although Professor Huxley has seen this with his usual perspicacity—witness his article on Descartes and his paper on Bishop Berkeley, in the first and sixth volumes of his collected works—he yet tells us, not only that he prefers, but that it is better for us all, to accept the materialistic notation rather than the spiritualistic."

The Materialistic Notation

For the natural sciences, perhaps the materialistic notation is inevitable; but for the moral sciences it is intolerable. In the first instance it is an accommodation; in the last, it is a falsehood. In the first, it is apparently a necessary concession to inveterate prejudices and long confirmed illusions; in the last, it is a sacrifice of the most certain truths and the most precious possessions vouchsafed to humanity. Here Huxley himself was driven to distinctions in favor of the science of ethics which Mr. Courtney well points out: "At the end, for instance, of his essay *On the Physical Basis of Life*, he quotes Hume's well-known words, that anything which does not contain abstract reasoning concerning quantity or number, or else experimental reasoning concerning matters of fact and existence, may safely be committed to the flames, because it is sure to be but sophistry and illusion. He [Huxley] adds the extremely significant note that many critics of this pas-

Huxley on Hume

sage seem to forget that the subject-matter of ethics consists of matters of fact and existence. Undoubtedly it does, but not of merely physical facts, nor yet of merely material or natural existence. It may, or may not, be more convenient or helpful to represent everything in accordance with a materialistic notation, from the point of view of the progress of knowledge, but what are we to do when the data of our science utterly refuse to be thus represented? How can the man who combats the cosmic process, and carves out for himself a moral code in the teeth of all that nature tells him [as Huxley teaches[1]], be represented by mere-

[1] "Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it. It may seem an audacious proposal thus to pit the microcosm against the macrocosm and to set man to subdue nature to his higher ends, but I venture to think that the great intellectual difference between the ancient times with which we have been occupied and our day, lies in the solid foundation we have ac-

ly materialistic formulæ? . . . Is it possible that if Professor Huxley had carried out to their logical development the thoughts involved in his Romanes Lecture, he would have supplemented, let us say, *The Physical Basis of Life* by an ethical theory reposing on very different foundations?''

Frontier of Mind and Nature

After all, it may be here conceded that there arises practically no question about dealing with the natural sciences in terms of the materialistic notation, and with the moral sciences in terms of the spiritualistic notation. It is only when we approach that mysterious frontier where mind and nature meet, and across which each has to pass its energies to exert its influence upon the other, that confusion, not to say contradiction, inevitably arises, and has arisen throughout the entire history of philosophy—at least since the time of Descartes. So far as I

quired for the hope that such an enterprise may meet with a certain measure of success."—"Evolution and Ethics," p. 83.

have been able to analyze the phenomena and to note the literature of the subject, the contradiction of materialism and spiritualism uniformly emerges the moment one undertakes to lodge any one fact—say a sensation—simultaneously in the material and the mental series. It belongs in one or the other. It cannot belong in both, for, by definition, each is exclusive of the other. If sound is a phenomenon of brain, it is not a fact of mind, and materialism is true. If sound is a fact of mind, it is not a phenomenon of brain, and spiritualism is true. If we undertake to treat it as both a phenomenon of brain and a fact of mind, *ex hypothesi* we fall into contradictions. For since all our knowledge, whether of brains (of other persons) or of sensations, falls within our consciousness, to attempt to treat a sensation twice, first as a fact of consciousness and then as an activity of brain, is really an impossible effort to treat the same identical phenomenon (or experience) from a double

standpoint—first from that of our consciousness, and then from that of some impossible vantage ground, falsely supposed to have been gained outside of our consciousness, whose impregnable limits can be as easily broken through as a man can lift himself over a fence by his boot straps, or jump out of his own skin. Now, I strongly suspect, without being able at this moment to verify the supposition (if it is verifiable), that Professor Huxley's clinging throughout to a single notation for all departments of investigation sprang from his clear perception that contradiction is ultimately and inevitably involved in the employment of both notations. Consistency depended on a choice of one to the exclusion of the other; contradiction and scientific suicide followed fast on the foolhardy attempt to employ both. He chose the phenomenally sufficient but ontologically false notation, contenting himself with frequent clear recognitions in his writings of this ontological falsehood.

"Modern Realism Examined"

While a teacher I had placed in the library of Vanderbilt University an English work entitled "Modern Realism Examined," by the Rev. T. M. Herbert, a dissenting minister and a professor in an Independent academy or seminary. It is one of the most solid and brilliant philosophical performances that have come under my notice. So far as I know, its main positions have never been turned. They are essentially such as have been indicated above. I heartily commend the volume to critical readers, believing that they will find Huxley and Herbert not very wide apart.

Ladd's Criticism

The preceding has been written in full view of the fact that even such an authority as Professor Ladd, of Yale, charges Huxley[1] with contradictory philosophical standpoints. For Dr. Ladd's attainments and critical acumen I have the utmost respect; but I venture the opinion that these alleged contradictions largely, if not wholly, disap-

[1] In "Philosophy of Mind," pp. 11–13.

pear when we keep clear the distinction between the ordinary scientific, and the strictly philosophical, modes of speech. Even Huxley's materialistic critic, Mr. Greenwood, is satisfied with such a sentence as this, culled from Mr. Huxley's writings: "In ultimate analysis it appears that a sensation is the equivalent in terms of consciousness for *a mode of motion of the matter of the sensorium*." Mr. Greenwood italicizes the last words, and adds "that this is quite conceivable to the ordinary mind." To the materialistic mind it is no doubt entirely satisfactory. For Mr. Greenwood takes ontologically the italicized words, which, if Mr. Huxley is to be believed concerning his own habits of expression, were written phenomenally. If Mr. Huxley is understood as expressing himself ontologically in such sentences as the one quoted above, we have indeed a correct statement of the materialistic position, with which Mr. Huxley is so often charged, but which, ac-

cording to the general analogy of his writings, and in many express passages, he distinctly repudiated. If it be asserted that a sensation is the real and ontological equivalent of a real and ontological mode of motion, there emerges at once the irreconcilable contradiction between materialism and spiritualism, briefly alluded to above, to which the entire history of modern philosophy is one continuous witness.

Huxley's Burial

It may not be inadmissible, even in a work like this, to cite in conclusion the editorial utterance of the London *Lancet*, which thus speaks of the circumstances of Mr. Huxley's burial: "One humble man asked if the ground was consecrated ground. The reply was that it was so, and the feeling of the reverent mourners was that henceforth it would be more consecrated than before. The service was read with much simple force by the Rev. John Llewelyn Davies, now Rector of Kirkby Monsdale, formerly

Vicar of Christ Church, Marylebone. Never was the momentous fifteenth chapter of the first epistle to the Corinthians read with more acceptance than over the great apostle of science, who was more religious than he would admit, or perhaps knew, and who, it is said, wished, a few days before his death, to be buried with the service of the Church of England. We scarcely regard this wish as one of the inconsistencies of a great man. Like other great men, with all the boldness of his thought, he knew the sharp limitation of his own knowledge. No deep student of his philosophy can charge him with irreverence or fail to see in his writing the conception that there is in the universe a being whose 'intelligence was as far beyond his own as that was beyond a black beetle's,' 'endowed with powers of influencing the course of nature as much greater than his as his is greater than a snail's.'"

CHAPTER XV

THE THEORY OF KNOWLEDGE: IDEALISTIC REALISM

Plato and Aristotle

St. Augustine

It is not difficult, of course, to discover the elements of a fairly definite theory of knowledge in the writings of Plato and Aristotle. And the Church father, St. Augustine, has quite as much significance as a philosopher as a theologian. In comparison with the "father of modern philosophy," Fénelon said that he would sooner trust Augustine than Descartes in questions of pure philosophy; and Nourisson affirms that it is beyond all question that Augustine made use of the method, and put in practice the principles, which Descartes would one day employ in the reconstruction of philosophy.[1] Professor Ladd does not scruple to declare that Augustine "rises superior to Aristotle and all antiquity" in respect

[1] *Progrès de la Pensée Humaine.*

of the criteria of knowledge, the function of philosophical doubt, and the ultimate grounds of certainty. Augustine's final doctrine is that all reality is implicate in the being, knowing, and willing of the self-conscious subject. It may be said that most of the philosophical works of Descartes have their chief interest in the construction of a theory of knowledge; Spinoza's unification of "substances" was a necessary advance upon Cartesianism in the channels marked out by its own positions; Locke and Leibnitz, from their opposed standpoints, contributed variant materials—variant, not only from each other, but from their immediate predecessors; Berkeley and Hume worked out some principles and problems to their last issues in theistic idealism, on the one hand, and sensational nihilism, on the other; while the latter aroused Immanuel Kant, who had a strain of Scottish metaphysical genius in his blood, and set the great German at work in earnest on the construction

Descartes

Spinoza

Locke and Leibnitz

Berkeley and Hume

Kant

and establishment of a critical theory of knowledge, to which all of his celebrated *Critiques* make their contribution, the "Critique of Pure Reason," particularly, running sharply and clearly the dividing line between the rational and the empirical elements in even the simplest and most elementary act of knowledge.

Such is a rapid outline of the history of epistemological speculation down to the beginning of the nineteenth century. Since then, in the writings of Fichte, Schelling, Hegel, and the rest of the Germans, the theory of knowledge has maintained its place and importance as the very heart of philosophical method and doctrine, in which have centered the idealistic and realistic controversies of our times.

The Later Germans

Objective Idealism

The system of thought and reality and their relations, set forth at large in the writings of Lotze, I prefer, for myself, to designate objective idealism, or idealistic realism. By the subjective idealists it would

be denied the name of idealism altogether and classed as a realistic philosophy; by materialists it would be utterly repudiated as idealistic airiness or moonshine; but it is perhaps none the worse as doctrine approximating truth that it should be subjected to this double fire from the opposition camps of a crude and crass materialism and of an unguarded and indefensible idealism.

Unsophisticated and Philosophical Realism

I have sought to show in Chapter XIII. the true nature of the products of sense-perception, according to the consentient testimony of physics, physiology, and psychology. This is perhaps as good an avenue as any other along which to approach in an elementary and expository way the problems of the theory of knowledge. For the unsophisticated realism of everyday life knowledge presents no problems. Odors, tastes, temperatures, sounds, colors, touches, all exist externally and independently, having precisely the same kind of existence apart

from our consciousness as in it or with it. The world of reality is double over against the world of our sensibility, and the latter is but a duplicate, a copy, a reproduction of the former. How this could be brought about presents no difficulty to the unsophisticated realism of common sense. It happens to everybody every day; it is perfectly familiar and transparent. There is no problem. Such a person declares himself unhesitatingly a realist; and that ends the matter. The carpet is as truly objectively colored as it is objectively extended; and the philosophical realist would be stigmatized as daft who should violently disrupt these two qualities of the carpet, and tell our unsophisticated friend that color is a "secondary" quality of carpets—existing only in the beholder, and only by sense-deception, not by sense-perception, in the carpet—while the extension, which seems to be the very basis and condition of the color, the beholder immediately perceiving

colored extension or extended color, is a "primary" quality, existing apart from the color in the object itself. How this extension gets itself recognized in our sensibility also by any other process than that which realizes the secondary qualities, our philosophical realist might not tarry to explain to his unsophisticated friend. Or, it may be that the philosopher—a realist, be it remembered—propounds to the man of common sense some such question as this: "How does this brilliantly lighted and gorgeously furnished room look when there is nobody in it?" Perhaps both the philosopher and his untutored friend would alike have to be reasoned with before they discovered the arrant nonsense of the question, whose equivalent is, "How does the brilliantly lighted and gorgeously furnished room look, when it doesn't look at all?"—*i. e.*, when there is nobody to see it. But the man of common sense would unhesitatingly answer, deeming any other reply nonsensical, that

A Question

"it looks to the last detail in the absence of all persons precisely as it does when it's crowded with a great company." But our realistic philosopher takes his obstinate and dogmatic friend in hand after some such fashion as this: "My dear sir, a moment's reflection must convince you that you can't possibly mean what you say. The colors of the portraits, of the fresco of the ceiling, of the wall paper, of the carpets, of the upholstery, of the flowers; the perfume of the latter as well; the sweet tones of the music box, and the singing of the canaries—all these are 'secondary' qualities, having their genesis in your sensibility and their *locus* in your personal consciousness: when you leave the room they all disappear with your absence! The room is then neither light nor dark, neither hot nor cold, neither vocal nor silent, neither colored nor colorless; these, my dear sir, are only categories of the pure sensibility, that have no possible application to, or connection with, ontolog-

ical realities." And so our common-sense realist departs dazed, for he had fondly imagined his opinions identical with those of philosophical realism, and here is a philosophical realist advancing notions as crazy as those of any idealist who ever lived.

Primary and Secondary Qualities

This distinction, in the formal classification of "primary" and "secondary" qualities, dates back, I believe, to one Mr. John Locke, an English philosopher of note. Since his time it has become the common property of British philosophy, particularly of the Scottish school, most widely and eminently represented in America by Sir William Hamilton, through whom it has been for a generation or two a commonplace of philosophical instruction. One of the earliest shocks received by this school of philosophical thought—which holds that there are some qualities which exist after an identical manner both in the objects themselves and in our sensibility or apprehension—was in the publication of Bishop Berkeley's

Sir W. Hamilton

Bishop Berkeley

"New Theory of Vision," an epoch-making and epoch-marking work in the most decisive and far-reaching import of the terms. He demonstrated once for all, irrefutably and beyond cavil, in particular that we have no perception of the third dimension of objects by sight, and in general how largely the element of judgment enters into our seemingly most simple and ultimate sense-perceptions, and how largely perception is an acquisition of adult experience under the laws of habit. Had Berkeley wrought out no other philosophical achievement than this, his importance for experimental psychology would still have been like that of Sir Isaac Newton for physics, or that of Charles Darwin for zoölogy. By a subtle and exhaustive analysis of one of the processes of sense-perception, supposed to be unquestionably original and immediate in its apprehension of objective reality, he shook the very foundations of duplicating realism, and that by a scentific rather than

a speculative exposition. Similarly in our day the physics and physiology of the whole area of sense-perception, as well as its psychology, in large part, have been brought within the range of science as such, and the tedious speculative logomachies of "hypothetical realism" and "cosmothetic idealism," and all that, with which the pages of Sir W. Hamilton abound, have simply been superseded and excluded. All such stuff, carefully labeled, has been relegated to the philosophical museums, where the interest is chiefly paleontological.

Common Realism

The disruption of an object, according to the common realism of the schools, into primary and secondary qualities, provides a "thing" as the center and base of union of the former, and the processes of a personal consciousness as the condition of the synthesis of the several forms of sensation—temperature, odor, taste, smell, sound, light, and color — which constitute the latter. But "touches," despite their dependence

on the same organism of nerve conduction and brain change, are inconsistently lifted out of the class of secondary qualities and by some at least supposed to yield an immediate, face-to-face knowledge of objectively extended things. This contention is invalid. Touch can no more accomplish the feat than the other senses, the reports of all alike being mediated by precisely the same bodily apparatus, and provoking similar psychical reactions by which they obtain their recognized and fixed values for consciousness. Further, the reports of all the senses alike have precisely the same phenomenal reality within the sphere of a personal consciousness, and precisely the same ontological ideality so far as they are supposed lumpishly to inhere in an insensate "substance," existing independently of all conscious apprehension.

It would be a poverty-stricken kind of object at best which would be left to philosophical realism, even if its contention with

regard to a partial sensible apprehension of self-subsisting material reality were granted; and so of late some of its advocates have accepted as the proper designation of their doctrine, "transfigured realism." The realism of the schools is "transfigured," not only by this stripping of qualities, to which psychology admittedly subjects the alleged material "thing," but, from the other side, by a physics which reduces its "substance" to vortex atoms; Lord Kelvin, the most distinguished British physicist of our times, having adopted, in his well-known theory, the demonstration of Helmholtz that vortex rings in a perfect, *i. e.*, frictionless, fluid would be conserved forever. Since such a homogeneous and imponderable fluid is something far different from matter as ordinarily understood, Lord Kelvin's definition may be said to reduce matter to "non-matter in motion." Other physicists, of the purely mathematical type, reject as too gross even this ethereal conception of

Transfigured Realism

Lord Kelvin

matter. So "transfigured" is this realism, indeed, that the naïve everyday realism of the common people would disown it as utterly failing to represent their so-called immediate perception of an external and extended material world, and as being as unintelligible as idealism itself.

Physics and Physiology

But passing from these elementary facts and principles, it may be urged that any adequate view of the physics and physiology of sense-perception still demands (1) for physics a world of ethers[1] and atoms, of vibrations and motions, substitutes for the apparent world of sense; and (2) for physi-

[1] I use the plural advisedly. From Lord Kelvin's "primordial medium," or ultimate ether, the proximate ethers of light and electricity are supposed to be formed. Of luminiferous ether Lord Kelvin says: "*That is the only substance we are confident of in dynamics.* One thing we are sure of, and that is *the reality and substantiality of the luminiferous ether.*"—Quoted from his "Popular Lectures and Addresses," I. 310, in Ward's "Naturalism and Agnosticism," I. 113, 114.

ology a realm of transmitting nerves and brain changes.

(1) As to the former it may be said in a word that they are conceived, and necessarily conceived, as falling fully under the laws of sense-apprehension, if man were endowed with a more numerous or a more delicate apparatus of sense. It would carry us too far afield to enter here into a detailed metaphysical criticism of the physical doctrines concerning "ethers" and "atoms" and "vortexes" and "centers of force" and such like: suffice it to say that whatever may be the physical existences and motions supposed to be necessary for the explanation of what actually falls within the range of man's sensitive life, all of them, so far as they are not merely abstract and hypothetical, and do not transcend the properties of matter as assigned by ordinary physical definition or conception, are conceived after the analogy of that phenomenal life, dependent upon a personal consciousness for their real- Physics

ization. Thus the instruments of more precise measurement and of more minute or more distant observation are, in their several directions, but mechanical extensions of man's powers of sense-perception; and if they could even endow man with new senses, as well as extend his present powers indefinitely, the law of the sensible apprehension of phenomenal reality would not be transcended. At the same time, it must not be overlooked, as hinted above, that the constitution of bodies, as taught by modern physics, is something very different from that of which the natural realist supposes himself to be immediately aware. Of matter, so familiar and intelligible to the everyday realist, the physicists find it impossible to give a generally satisfactory account and definition. Many severely mathematical physicists, rejecting Lord Kelvin's construction of matter as speculative, regard their equations merely as an analytical and descriptive apparatus, and decline all proposed definitions of the constitution of

matter and the nature of force as baseless and useless, if not ignorant, speculations. In the basal dynamic equations, four quantities are so related that if three are given the fourth can be calculated. Their relations are treated not as causal but as mathematical. Kirchoff defines the function of mathematical physics to be "to *describe* in the exactest and simplest manner such motions as occur in nature." Professor E. Mach, of the University of Vienna, observes: "It is said, description leaves the sense of causality unsatisfied. In fact, many imagine they understand motions better when they picture to themselves the pulling forces; and yet the *accelerations*, the facts, accomplish more, without superfluous additions. . . . The more proper course is *to regard the abstract determinative elements of a fact as interdependent* in a purely logical way, as the mathematician or geometer does."[1] The common text-

[1] "Popular Scientific Lectures," pp. 253, 254, from an address "On the Principle of Comparison in Phys-

books on physics resort to all manner of shifts to avoid the fundamental difficulty of giving a right and final scientific conception of matter and force.[1]

Physiology

(2) As to the latter—transmitting nerves and changing brains—it must not be forgotten that these also belong to the realm of merely phenomenal reality. Indeed, the whole of my body makes good its existence in my consciousness in precisely the same way and under exactly the same laws as does the most unrelated and most distant object. This was in fact the last ditch of expiring natural realism, as represented by such writers as Dr. Noah Porter and others, when surrendering entirely the doctrine of any im-

ics" delivered before the General Session of the German Association of Naturalists and Physicians at Vienna, September, 1894.

[1] This sentence is based upon the examination of a considerable number of such text-books in common use in the colleges and universities of America and England; but it would be perhaps both inconsiderate and unnecessary to name and cite them here.

mediate sensible apprehension of an external world—that is, external to the body as well as to the mind—they set up the contention that there is an immediate mental apprehension of the organism as stimulated, as if somehow the material body, as nerve or brain, did succeed in projecting itself directly within the realm of conscious life and personality. But a pain in my great toe is as much an event outside of my proper self as a change in the sun ninety-two millions five hundred thousand miles away. For accepting as sufficiently accurate the statement of Helmholtz that the nervous current travels at about the rate of one hundred and twenty feet a second, it would follow in the case of a man six feet high that in the event of injury to his great toe it would be, roughly speaking, about one-twentieth of a second before the nervous telegraph would convey the intelligence to headquarters in the brain. Thus the transactions and events of any part of my organism, belonging as they do to the

sphere of phenomenal reality, are dependent upon the same conditions for getting themselves recognized as elements of my conscious life as are changes in the sun or any other heavenly body. No part of my body is I. My brain is as much external to me as my outer skin, and has as little real, and less apparent, recognition in consciousness as an objective and extended thing. Besides these reports, one may in the clinic obtain sense-knowledge of the brains and nerves of other people as the dissecting knife is applied; but it is needless to add that all information gained in this way falls under the universal laws of sensational experience. At no point is the unity of experience split in twain, and by no element it contains is this experience dissevered from the conscious person who has it. When we add to all this the proof of the merely phenomenal reality, and the ontological ideality, of space —a doctrine which I conceive to be of very easy demonstration—the defenses of object-

ive idealism seem fairly complete and conclusive.

The Materialistic Paralogism

Here seems to be as good a point as any at which to expose the very common and very popular materialistic paralogism. "If I could only once get sight of a soul," says the smart young medical student, "if I could just dissect one out of a human body, however small, and however great the magnifying power of the microscope necessary to render it visible, I should be convinced." Indeed! The very conditions imposed by this brisk young man for the proof of the existence of the soul would, if satisfied, constitute an immediate demonstration that there are no such things as souls. For if a soul could consent to become visible, tangible, audible, and the rest, it would immediately sink into the realm of merely phenomenal existence and promptly forfeit its rank as an ontological reality. Mind consciously exists for itself; but can never submit itself to the direct sensible inspection of an-

other mind. The most important and far-reaching result of objective idealism, or idealistic realism, is that *Personality, whether divine or human, is once for all made the abiding place of all ontological reality, while the realm of perfectly definite phenomenal reality, universally and unchangingly ordered according to law which is independent of finite persons, becomes the theater of the activities of the world of spirits, and the means of communication between persons, divine and human. God, man, and the world thus fall into intelligible relations; the world is a true universe shot through with purpose; and philosophy, though many riddles and difficulties still remain, approximately accomplishes its task of comprehending reality as a whole.*

Ontological and Phenomenal Reality

The categories of reality—the ontologically valid categories—have their roots in personality and personal experience. The same is true, indeed, of the phenomenal categories, which fix simple and ultimate *facts*,

The Categories of Reality

as facts of observation can only be fixed, namely, by the elements of experience as it is; but the consideration of these need not detain us here. (1) The supposed self-subsisting unity of "things," which to metaphysical criticism presents so many perplexities; (2) their so-called substantial permanence; (3) the alleged material connections and operations of causes and effects; and (4) design or purpose in nature—all are but the reflections or projections (1) of the unity of consciousness; (2) of the knowledge of personal identity, possible only to a being possessed of memory and expectation; (3) of the exercise of will; and (4) of the conscious employment of purpose, in the personal experience of man. But all this stops short of the ultimate explanation of reality. In one comprehensive word: Experience, being one, necessarily unifies all its elements, and on this ground phenomena are united in one continuously and completely interacting universe, without the possibility of a

second; a universe which finds its unity, its permanence, its causality, and its purpose in a Person—the everliving God. All the ontologically valid categories of reality find their true and exhaustive interpretation only as they are carried completely through and beyond the world of the phenomenal, and find their final lodgment and rest in the bosom of a unitary, self-identical, volitional, and consciously purposeful Intelligence, that is, a Person. "Only a Self can be such an Ideal-Real," says Professor Ladd, "as this cognized system of real beings and actual transactions is known to be."[1] If, however, the categories of being and cause, or of substance and sufficient reason, if those names be preferred, are lodged in supposed unitary and isolated "things" themselves, and the category of purpose is reduced to "law," or denied and abandoned, materialism and atheism follow as a matter of course. And here may be cited Professor Bowne's very brief

[1] "Philosophy of Knowledge," p. 590.

but very conclusive "natural history of atheism":

"So long as matter was regarded as inert, causation had to be sought outside; but by the dynamic theory of matter, causation was provided in matter itself. A principle of order was next found in the notion of law, and nothing more seemed needed. Matter furnished the being, force furnished the causation, and law provided the order. These three together formed the one Nature or system of the world, and beyond this there was nothing. Matter and force are already seen to do much, and are daily doing more. No one can set a limit to their possibilities. The reign of law is fast becoming all-embracing, and the more law the less God."[1]

Natural History of Atheism

The category of causality, truly interpreted, carries us directly from the human to the divine will, as has been shown at length in a preceding chapter: like Noah's dove flying over the expanse of waters, the prin-

Causality and Design

[1] "Theory of Thought and Knowledge," pp. 110, 111.

ciple of sufficient reason finds no resting place in all the realm of phenomenal reality. The category of design, it is freely admitted by all, if it exist at all in nature, carries us by the same long flight into the bosom of God. Of the category of substance I must treat a little more particularly.

Substance Psychologically Considered

Psychologically and phenomenally, the common doctrine of this category has some such genesis as this. If it be accepted that all our senses are modifications of touch, it is literally true that some of our senses are more like touch than others. In any case, it may be said that the more touch-like senses are habitually employed to verify the reports of the less touch-like: thus taste is sometimes used to verify smell, and touch itself frequently to verify sight. Indeed, the common notion of "substance" is rationally explained by the constant relations between these two senses of sight and touch. Through sight we are momentarily, in all our experiences, annexing to its proper re-

port the properties of extension and solidity strictly afforded (in a phenomenal way) by the sense of touch, confident that they can be verified by direct appeal to that sense. Thus if a fresco is so perfect as to give us the impression of actual projection from a wall or ceiling, we correct the report of sight by placing our hand on the object and discovering that it is a plane surface. Thus through touch we largely acquire our ultimate notions of the externality, extension, solidity, and permanence of objects, which are so much more "tangible" than the reports given by other senses that they finally harden into the idea of an inner core which gives support to the less tangible or more evanescent qualities. Thus, forgetting or overlooking that experiences through touch are as much experiences of the sensibility as those of odor, color, or sound, dependent for their transmission on a similar nervous apparatus, we come to assign a fictitious ontological value to this sense which it does

not possess, and the psychological genesis of the category of substance is evident.

Confusion

Further, in the writings of at least some natural realists there is a strange confusion lurking in their doctrine of substance and attributes. Sometimes "substance" is represented as unknown and unknowable, the hidden and hypothetical substrate in which all attributes, which alone may be known, inhere, but itself altogether destitute of qualities. Then again the "primary" qualities of matter, so called, are bundled together as themselves constituting the "substance" —which then becomes extended, solid, and permanent—and thus "substance" becomes the known support and basis of the affections of our sensibility. Such confusion is easily and fully accounted for if the psychological account of the genesis of this notion given above is accepted as essentially true. Besides, this whole notion of "inherence" of attributes is opaque: it explains nothing, not even how itself is possible. On

the contrary, all modern physics and physiology unite in teaching that the "quality," so far from "inhering" in a "substance," is an "effect" produced in and discernible by a consciousness, and thus finds its true explanation according to the category of causality.

Substance Metaphysically Considered

On the metaphysical side, since, as we have seen, all the categories have their root in personality, *i. e.*, in the experience of persons, the "substance" of matter is but a shadowy projection and illegitimate transfer into the "things" of the external world of our knowledge of personal identity, conditioned by memory and expectation. "Substance" thus projected into "matter" is easily shown to involve materialistic and atheistic consequences, since it surely reaches a doctrine of self-subsisting being short of personality, *i. e.*, short of God. Descartes started with his doctrine of the two substances; but Spinoza immediately disclosed the contradiction of his position,

since the very notion of substance is that which so exists that it needs nothing else for its existence, and he passed through nature to God. If it be said that Descartes added to his definition of the two "substances" that they were dependent on God alone for existence, it may be asked, aside from the inconsistency of this definition, What is gained by interpolating this hypothetical and unknown substance between phenomena and God, who is their sufficient cause and explanation? What rational demand for "support" or source do the phenomena make that stops short of Personality or that is not satisfied thereby? Or what need has the deity for this intermediary of "substance," so inaccessible that it has never revealed itself to sense, and so dark and dense that it has never been irradiated by the light of reason? What, indeed, does "substance" lodged in matter explain? And who has been able to explain "substance"? But in our modern realistic metaphysics "sub-

stance" is that unknown core of matter which supports without being supported, which it is as impossible to bring within the sphere of experience as the Kantian "thing in itself." What sort of a dead pad or inflexible buffer is this which many insist on interposing between that rich and varied experience of reality which unfolds itself in human consciousness and the God who is its sufficient Source and Cause? Mind you it is from phenomenal experiences that process is taken to this unphenomenal or hyperphenomenal self-explaining and self-subsistent substance, supporting all things without needing any support itself. Now, how does this hyperphenomenal "substance," lodged in matter as a hard and qualityless core, help us to understand phenomenal reality? How can it "support" *anything?* And how can it be without supports? If the deity supports it, why should he support a support instead of directly supporting what needs his support? How can "substance"

be the immutable subject of change? Self-sufficiency and immutability are attributes which we usually employ in quite a different connection.

Reality Rational

We are forced to conclude that phenomenal reality is rational through and through. It stands in an immediately reasonable and demonstrable relation with Personality, in origin, process, and apprehended result—an object through which the rays of reason shoot from circumference to center and from center to circumference again, until it stands transparent and complete in the open eye of the soul. There is no irrational, irreducible, lumpish remainder, no Aristotelian "matter" distinct from "form,"[1] no Kantian "thing in itself" or "noumenon" distinct from its "phenomena," no Cartesian or Hamiltonian "substance" distinct from its "attributes." "The impossibility of having the consciousness of any object which cannot be combined with the consciousness

[1] If Aristotle so taught.

of self is a proof that the world is a rational system.'[1]

Suppose we adopt for a moment the fundamental realistic thesis of the ontological reality of matter, and trace it to its consequences. For this purpose let us take the account given by Professor Paulsen, of the University of Berlin, himself an idealist—not so strict and safe and guarded, indeed, as Professor Bowne, but able to do full justice to the opposing system: "Reality as such is body; its attributes are extension and impenetrability; its primary and essential form of activity is motion. These principles can and must explain all processes in reality, in particular also the so-called states of consciousness. . . . Experience discloses the fact that psychical processes occur only in most intimate connection with physical processes. . . . Hence it fol- Paulsen

[1] "Christianity and Idealism," by John Watson, LL.D., Professor of Moral Philosophy in Queen's University, Kingston, Canada.

lows that science must seek the cause of the former states in the peculiar quality of these bodies. Psychical processes are to be regarded as functions of the nervous system. . . . To explain thought by means of a soul is just like the explanation which the learned doctors of the school in Molière's play give for the fact that opium puts one to sleep: it has dormative powers. Science, materialism continues, differs from the prescientific mode of thought in this, that it explains phenomena, not by means of essences and powers, but by means of other antecedent and simultaneous phenomena. Explanation in natural science means to state the law according to which a given phenomenon is connected with other phenomena, so that the entrance of the one may be foreseen from the appearance of the others. . . . Science has the same task to perform in relation to states of consciousness. . . . The antecedent and concomitant phenomena are, as experience

shows, physiological processes in the brain and nervous system. Accordingly, it is the business of science to substitute for the pseudo-science 'psychology,' and its pre-scientific principles, 'soul' and 'psychic forces' the natural-scientific explanation. Scientific psychology is physiology. This fact may be proved logically as follows. The highest principle of all modern natural science is the principle of the conservation of energy. The sum of real motion and of motive force is constant. Motion is transferred and transformed, mass motion is turned into molecular motion, active energy is transformed into molecular motion, active energy is transformed into potential energy, but it is preserved without loss, and may be recovered from it. . . . Movements are introduced into the nervous system from without; air waves proceeding from a sounding bell strike the auditory nerve and arouse a physiological process in it that may be shown to be carried to the central organ by

means of the nerve-fibers. We are not able as yet to pursue this process to its end, but we may assume that it does not altogether vanish. Simultaneously, as we know from another source, a sensation occurs: a sound is heard. We conclude: the sensation is nothing but the nervous process produced in the central organ by the peripheral excitation." [1]

Sensations and Volitions

This account of Paulsen's, the reader will readily perceive, is nothing but a detailed application to psychology of the general principles set forth in Professor Bowne's "natural history of atheism." In Paulsen's account, sensations, on the one hand, and volitions, on the other (as indicated in another example, which it is unnecessary to quote), are recognized as members of the physical and physiological series which plays through man—the stream entering, so to speak, at one hole, and

[1] Friedrich Paulsen's "Introduction to Philosophy," pp. 60–63, extracts.

emerging at another—thus giving them the same value as matter and its forces. But some of the materialists heap yet greater indignities on sensations and volitions. Since it cannot yet be shown that the sensations as such consume energy, or that volitions as known in consciousness create any, they are, under the law of the conservation of energy, denied even a *bona fide* place in the material series. Volitions and sensations are not even "phenomenal": they are "epiphenomenal," a mere useless side product of the human organism, having no more value in the scientific market than the slag issuing from the furnace has in comparison with the precious metals freely taken in the markets of commerce. Facts of consciousness are but the shadows cast by the moving train of material realities. When we stand face to face with such thoroughgoing issues as these, we need not wonder that one of the ablest and most brilliant of recent historians of philosophy does not

hesitate to declare of the idealism of Bishop Berkeley himself that it is "the only metaphysic that may be successfully opposed to materialism."[1]

The Common to All

I have been led into dwelling at such length on the *idealistic* side of what seems to me to be the true philosophical system, that I have left little space for an adequate development of the *objective* element, which, however, has been previously treated at the close of Chapter XIII. Before summing up in the words of Professor Bowne, however, I must be permitted to add that there is, in the system, no place left for the aberrations and delusions of the individual as against the catholic convictions of the race, even in the sphere of phenomenal reality. It is the *common to all*, and not the *peculiar to me*, which verifies itself as an objective member of the system of phenomenal reality. As Professor How-

[1] Alfred Weber, Professor in Strasburg, "History of Philosophy," p. 397.

ison, of the University of California, has recently written: "There is no conceivable criterion by which an experience could be discriminated as objective, except the consenting judgment of a total society of minds."

Idealistic Realism

For myself I am satisfied with the phrase "objective idealism" or "idealistic realism" as the correct designation of the system of philosophy which as a whole commends itself to my mind as true and conformed to the reality of the universe. But, in conclusion, let us listen to Professor Bowne:

Bowne

"The difference between this idealism and the traditional conception of idealism is also manifest. The common thought of idealism is that it denies the system of experience altogether as something common to all, and reduces the external world to an atomistic and discontinuous set of impressions in scattered minds. . . . We have at length become accustomed to the idea of universality in the phenomenal, and are

gradually growing able to distinguish between phenomenality and illusion. This makes it possible to maintain at once the subjectivity and the universality of the world; that is, that it exists only for mind and not in itself, and yet that it exists for all minds. . . . But however this may be, it is plain that one may believe in the subjective existence of the world of things without thereby making it a particular delusion of his own, and may also believe in the universality of the world, or in its existence for all, without admitting its extra-mental existence. Such an idealism would differ from realism only on the one point of this extra-mental existence. Both alike would have an orderly and universal system of objects, and both would be equally far from conceiving this system as an individual delusion. . . . Let us say, then, that the world is essentially a going forth of divine causality under the forms of space and time, and in accordance with a rational

plan. The outcome of this activity is the phenomenal world, which is neither outside nor inside of God in a spatial sense, but which exists in unpicturable dependence upon the divine will; as our thoughts are neither outside nor inside of the mind in a spatial sense, but depend upon the mind as their cause and subject. This world, being independent of us, has all the continuity, uniformity, and objectivity which an extra-mental system could have; and, as distinct from individual delusion, is real and universal. Indeed, it is hard to say what this view should be called. In distinction from the idealism [nihilism] of sensationalism, it is realism. It is realistic, also, in affirming an objective cosmic system independent of finite thinking. It is idealistic, on the other hand, in maintaining that this system is essentially phenomenal, and exists only in and for, as well as through, intelligence. Over against the human reason whereby nature exists for us is a supreme reason, through

and in which nature has its real existence."[1]

If one finds himself halting between idealistic realism and the common dualistic realism, he may well remind himself, at this point, that the interaction of mind and body, which is an insoluble mystery and downright contradiction in the latter system, presents no difficulty in the former. Surely the doctrine which easily and naturally solves the hitherto inexplicable problem which Descartes bequeathed to modern philosophy has a high claim to truth, which cannot be lightly set aside by the candid inquirer.

[1] "Theory of Thought and Knowledge," pp. 327–343, extracts.

CHAPTER XVI

A PRESCRIPTION FOR MODERN MATERIALISM

Berkeley and Lotze

THAT the ground of the world-process is objective, spiritual, personal, and that apart from minds phenomena could have no existence, are elements alike of sound Lotzean and of sound Berkeleyan doctrine. Berkeley and Lotze reach essentially the same objective idealism by different routes. They approach the same object from opposite directions, indeed, but land at the same destination. Berkeley, by analysis of the process of perception, reveals the subjective sensation of objective origin—its manifestation permeated by law of which there is no subjective control—which by rational construction becomes knowledge; Lotze, by solution of the problem of the causality involved in change and the universal connection of things according to law, reduces matter to phenomenal reality and finds its existence in the energizing of the Infinite

and its locus in human consciousness. Berkeley's doctrine is psychological; Lotze's metaphysical. But they are essentially complementary, not contradictory. One starts from minds and the other from things, but both alike reach the phenomenality of matter and the true ontological reality of spirit. The Lotzean doctrine naturally emphasizes the ceaseless energizing of the Infinite according to law, while the Berkeleyan doctrine just as naturally emphasizes conscious percipiency of the phenomena thus projected within the sphere of intelligence; but both alike, and in perfect harmony, deny the existence of phenomenal reality apart from mind. Berkeley is thus subjective and psychological, while Lotze is objective and ontological; but united they afford the broadest and deepest basis for idealistic realism. It is doubtless true that Berkeley has not put the emphasis as decidedly upon the universal and unchanging elements of experience as

has Lotze; certainly he has not done it with the vigor and vividness with which Professor Bowne performs this task in his "Theory of Thought and Knowledge." But, even if this thought is relatively obscure in Berkeley, his subjective view-point is sufficiently explanatory of it, and Lotze's objective view-point supplies most naturally the exact correction which it needs.

Constructive Philosophy

It is high time for philosophy to enter upon its constructive and universalizing stage. Instead of emphasizing insignificant differences—especially when their source is sufficiently evident—it is the business of modern philosophy to search for essential identities, and to rejoice over them as over great spoil. I do not question the rigidly scientific accuracy of Professor Bowne's method in constantly finding the ultimate explanation of phenomena in their metaphysical causes, in passing from the inductive to the productive plane, and from phenomenal reality to ontological reality as its

only sufficient ground. But, if such a book as I am seeking to describe is to be written as a breakwater against the flood of materialism that is inundating the modern scientific world, it must make the approach from the more obvious but equally true psychological side, as well as from the profounder metaphysical side; and the distinct effort must be deliberately put forth to dissipate the ordinary scientific prejudices and superstitions, and to make connections with the average scientific ways of looking at things. Now, such an historian of philosophy as Alfred Weber has recognized the analysis of Berkeley as the only antidote that can be successfully opposed to materialism, and such a scientist as Huxley has conceded the impregnability of Berkeley's position. But Berkeley and Lotze in their different ways reach scarcely distinguishable conclusions, and it thus becomes pedagogically expedient—or, as we should say in theology, apologetically expedient—to unite rather than di-

vide them; to treat Berkely as the psychological complement of Lotze, and Lotze as the metaphysical complement of Berkeley, and thus to build on the broadest and deepest foundations the wall that shall withstand the oncoming assault of a deadly materialism, fatal alike to knowledge, to morals, and to religion. The psychological analysis of the process of perception is much more simple and more immediately convincing than the metaphysical proof of the merely phenomenal reality of things. Both have been sufficiently considered in preceding chapters. If the materialist is to be convinced and converted, I believe the psychological is the natural avenue of approach, as it certainly is the natural, if not necessary, introduction to the metaphysical argument. But, psychology and metaphysics united, the harmonized conclusions of Berkeley and Lotze seem invincible; and thus are the weapons formed to our hand for the achievement of a victory for which the whole modern world

"groaneth and travaileth in pain together until now."

Finite Persons

Of the finite, two conceptions are possible. It may be a form of energizing on the part of the Infinite, or it may be a real creation. In the first case its existence is phenomenal; in the second, ontological. In the first case we have "things"; in the second, persons. In neither case can the finite be identified with the Infinite, and pantheism is excluded. The decision between the two views is reached on the basis of the facts of experience. If any finite being exists capable of acting from itself and for itself, it has in that fact the certain test and mark of reality as distinguished from phenomenality. This mark occurs only in human spirits or persons. If it be asked why the Infinite may not "posit" or create impersonal as well as personal agents, the answer is that identity and causality are found only in the personal, while analysis reveals that the impersonal has not even subjectivity, and is sim-

ply the phenomenal process of an energy not its own. Hence, while things are but the energizing of the Infinite, persons are created, posited—not made out of some pre-existing material, but caused to be. This distinction, on the general basis of Lotzean metaphysics, is clear and satisfactory. Persons possess, as Bowne puts it, "ontological otherness to the Infinite." Human beings are lifted out of the order of inductive into that of productive causality, out of the category of phenomenal conditions of results into that of real causes. Nature is not a closed system. Man by his free and real agency projects results into the natural series which nature could never have reached independently. This free causality of man in nature which produces its results, not by the disruption of law and continuity, but by the knowledge of law and obedience to it, may be used as a help to a proper understanding of the like free and causal relation of the Creator to the world.

God and Man

If the concession of ontological reality to persons is real, it must be identical in kind, though of course not in degree, with the ontological reality of the Infinite; and, apart from the orderly energizing of the Infinite according to law which constitutes the constant world of things, they—God and man—must sustain similar relations to that world of things existing in its orderliness. Man, within the limits of his dependence on the Infinite, must be truly a creative first cause whose orderly intelligence and efficient will produce otherwise nonexistent phenomena first in his own body, phenomenal like other matter though it be, next in the fixed and actual order of the independent phenomenal world, and finally in the consciousness of his fellows, through the mediation of their bodies—thus finally certifying to them his existence as a rational and causal being, that is, a person. When a rational person writes a book, he conveys to a reader of that book not only a phenomenal manifes-

tation of the thinghood of the book in the black characters upon the white paper, but a rational manifestation of his personality, because the phenomena are the bearers of a message, invisible, indeed, but with a meaning in it which evinces the very organism of reason itself. Of this message neither the world nor the Infinite is the author, but the writer of the book; without whose agency it could never have projected itself into our consciousness. Within that orderly and rational sphere of phenomenal manifestation which we call the universe, as summing up the many in the one, and as the ceaseless energizing of the Infinite according to law, there are smaller but definitely marked circles of phenomenal manifestation—as architecture, manufactures, spoken and written language—which harmonize, indeed, with the whole of which they form a part, but which evince also in themselves an independent organism of reason and a source of power or efficiency directed by reason;

and at the center of each of these minor circles there is a person, a human spirit. "No man hath seen God at any time," nor hath any man looked upon his fellow. But the evidence for the existence of man—a finite, but free and rational spirit—as I must put it in this connection, is of the same kind and, as far as I can see, of the same cogency with the evidence for the existence of God. As against the atheist and materialist I must add that the argument for the existence of God is of the same kind and the same cogency as the argument for the existence of man.

INDEX

ABELARD, his motto quoted, 53.

Agassiz, Louis, quoted, 160.

Agnosticism, of Hamilton and Mansel, 6.

Albertus Magnus, mentioned, 15.

Anaxagoras, quoted, 101, 102.

Anselm, author of ontological argument, 14; his theological importance, 15; his argument stated, 16, 17; his Proslogion mentioned, 17; his argument translated, 17, 18; his motto quoted, 53.

Aquinas, Thomas, mentioned, 15.

Argyll, duke of, on the flight of birds, 201.

Aristotle, his general theistic doctrine, 107–109; a further allusion to, 146; creative energy of, 155; his doctrine of the four causes in Physics and Metaphysics, 156–158; scholasticism based on, 158; two branches of his teleology, 159.

Atheism, natural history of, 313.

Atoms, manufactured articles, Herschel and Maxwell on, 104 (footnote), 197.

Augustine, St., philosophical significance of, 290.

BACON, LORD, on final causes, 154, 155.

Bain, Alexander, his Logic quoted on chance, 173, 174.

Bee, its construction of a cell, 201–203.

Berkeley, Bishop, his relation to Huxley, 269–289; his New Theory of Vision, 297, 298; his relation to Lotze, 331–336.

Bibliotheca Sacra, 1851, quoted, 17, 18.

Birds, flight of, duke of Argyll on, 201.

Body, mechanism of, 241, 242; an intermediary, 242; a bridge, 244.

Bowne, Borden P., rejects Anselm's argument, 28; accepts his conclusion, 31, 32; on teleology, 193,

194; quoted on natural history of atheism, 313; on idealism, 327–330; his method, 333, 334.

Calderwood, Henry, his "Philosophy of the Infinite," 6; his "Moral Philosophy" quoted, 6, 39, 40 (footnote), 111–113, 120, 122, 123, 131–135; controverted on necessary and possible proofs, 6–11; his method accepted, 12, 13.

Carpenter, Dr. W. B., on mind as the source of power, 139.

Categories of reality, 310–313; of causality and design, 313, 314; of substance, 314–319.

Causa transiens, 215.

Cause, true nature of as personal, 129–131; Calderwood's statement concerning, 131–135; Sir John Herschel on, 136; other authorities enumerated, 137–139; Winchell's analysis of, 140–147; value of the doctrine for theism, 149; efficient, final, formal, and material, 158; definition of final, 175; true doctrine of, 178.

Chalmers, Dr. Thomas, his fatal concession, 105-107.

Chance, defined, 170; McCosh, Mill, and Bain on, 171–174.

Change, not due to a single cause, 207; intellectual formulation of law of, 261, 262.

Chicks, Two, Fable of, 88–90.

Cicero, on final causes in de Natura Deorum, 154.

Clarke, Dr. Samuel, his Demonstration of the Being and Attributes of God, 121.

Cocker, Dr. B. F., his Theistic Conception of the World quoted, 139, 140.

Cogito ergo sum, 51–53.

Comte, A., positivism of, 219.

Concursus Dei, 226–228.

Consensus, Gentium, 81; of all sciences, 97.

Cooke, Josiah Parsons, on the freezing of water, 198–200.

Copernicus, mentioned, 5.

Cosmological argument,

syllogism of, 92, 93; major premise, 93; minor, 94; logic, 95, 96; Kant on, 124, 125; Locke on, 125, 126; Lotze on, 126, 127; worth and width of, 127.

Courtney, W. L., on Huxley in the Fortnightly Review, 271, 279–283.

Cudworth, Ralph, his Intellectual System of the Universe quoted, 40, 41 (footnote).

Darwin, Charles, on teleology, 194–196.

Dei, concursus, 226–228.

Descartes, René, his argument not identical with Anselm's, 32, 33; his Principles of Philosophy described and quoted, 32, 33, 34 (footnote), 42, 43 (footnote); Meditations quoted, 34–36 (footnote), 42 (footnote), 45 (footnote), 62 (footnote); original collected Latin edition of Works described, 36 (footnote); supported by Ueberweg, Noiré, Calderwood, Cudworth, Leibnitz in holding idea of infinite as positive, 37–42; his Discourse on Method described, 42–44; quoted, 43 (footnote), 44, 50 (footnote), 51 (footnote), 52 (footnote), 61 (footnote); his four principles of philosophy, 45, 46–59; his greatness, 46–50; his argument analyzed, 60, 61–63; his use of the ontological argument, 60, 63–76; his argument estimated, 74–78.

Design, nature of argument from, 150, 163; Kant's statement and estimate of, 150–153, 163, 164; the Scriptures on, 153; Socrates, Cicero, Bacon, Aristotle, Kepler, Agassiz, Ueberweg, and Schleiermacher on, 153–161; scientific misconception of, 162; attacks of Hume and Mill on, 165; its harmony with efficiency, 167–182; in effect proof of intelligence in cause, 183–192; additional instances of, 193–203.

Diman, J. Lewis, his Theistic Argument, quoted on First Cause and Infinite Regress, 116–119.
Doubt, Cartesian, 53.
DuBois-Reymond, on incomprehensibility of sensation, 248.
Duns Scotus, mentioned, 15.

Education, process of, 251, 252.
Elements, chemical, 102.
Erdmann, his History of Philosophy quoted on Descartes, 64.
Eternity, of the universe, 96–99; of matter, 99–110; a scientific disproof of, 124.
Euclid, mentioned, 5.
Evolution, bearings of on teleology, 184, 185.

Fable of two chicks, 88–90.
Finite persons, 336–340.
First Cause, a self-existent, doctrine of, 120, 121; Diman on, 116–119; Kant on, 118, 119; Spencer on, 119.
Fischer, Kuno, mentioned, 42, 60; his Descartes and his School quoted, 66, 67–72, 74.
Flint, Robert, his Theism and Antitheistic Theories, 16, 29 (footnote); on Anselm, 16; his position further noticed, 29 (footnote).
Formula, general, of relations of physics, physiology, and psychology, 263–268.

Ganot, his Physics cited, 200 (footnote).
Gaunilo, his Liber pro Insipiente described, 18, 19.
General formula of relations of physics, physiology, and psychology, 263, 268.
God, universality of idea of, 1, 2; a large conclusion, 2, 3; knowledge of not innate, 7; not intuitive, 8–10; the only perfect Person, 233.
Greenwood, G. G., on Huxley in the Westminster Review, 272–279, 287.
Grove, Prof., on causation, 139.

HAMILTON, SIR W., agnosticism of, 6; controverted by Calderwood on doctrine of cause, 132–134; on primary and secondary qualities, 297.

Harmony, preëstablished, 224, 225; hypothetical, 226.

Hartmann, E. von, on elements of final causes, 175; on unconscious intelligence, 183; on the human eye, 188–191.

Hearing, sense of, 245–250.

Hegel, G. W. F., accepts Anselm's argument, 15, 16.

Herbert, Thomas Martin, his Realistic Assumptions of Modern Science quoted, 181, 182; the book commended, 286.

Herschel, Sir John, quoted on atoms, 101; on nature of cause, 135, 136.

Homology and teleology, 159.

Howison, Professor, quoted, 327.

Hume, David, his attack on doctrine of causality, 128; results of his skepticism on course of philosophy, 129; in profounder doctrine of causality, 129–131; his denial of final causes, 165, 186.

Huxley, Thomas H., on evolution and teleology, 184; on unaccountability of sensations, 249; his relation to Bishop Berkeley, 269–289, 334; was he a materialist? 269; quoted on materialistic nomenclature, 270; his Evolution and Ethics quoted, 272, 273, 282, 283 (footnote); on Hume, 281; burial of, 288, 289.

IDEALISM, objective, 292.

Infinite, Calderwood's Philosophy of, 6; source of knowledge of, 37; idea of, not negative, 37; so teach Descartes, Ueberweg, Noiré, Calderwood, Cudworth, Leibnitz, 37–42; transcendent and immanent, 229; the absolute person, 229.

Infinite regress, 110–119; Calderwood's position on, 111–113; satisfies neither observation nor reason, 113–115; further refutation of, 115, 116; Diman's conclusive statement, 116–119; Spencer's agreement, 119; rests on a fictitious universal, 207.

Instinct, argument from, 84; defined, 85; animal and human, 85–87; how related to environment, 87–90; of the bee, 201–203.

Interaction, of soul and body, 219–222.

Iverach, James, quoted, 101 (footnote), 102, 103 (footnote).

JANET, PAUL, on final cause, 176, 177, 178.

KANT, IMMANUEL, refutes ontological argument, 14, 28, 29 (footnote); quoted by Diman, 117–119; on the cosmological argument, 124, 125; estimate of the design argument, 150, 153; his rejection of, 153 (footnote); on Aristotle's logic, 156; summary of design argument, 163, 164.

Kelvin, Lord, on vortex atoms, 301, 302 (footnote), 304; on the luminiferous ether, 302 (footnote).

Kepler, J., quoted, 159.

Knowledge, of God, not innate, 7; nor intuitive, 8–10; of God and of man one, 12, 340.

Knowledge, Theory of, 290; Plato, Aristotle, Augustine, Descartes, Spinoza, Locke, Leibnitz, Berkeley, Hume, Kant, and the later Germans on, 290–292.

LADD, GEORGE T., his Outlines of Physiological Psychology quoted, 260; his criticism of Huxley, 286; his estimate of St. Augustine, 290; his Philosophy of Knowledge quoted, 312.

Leibnitz, G. W., his doctrine of a positive infi-

nite quoted, 41, 42; mentioned, 43; his preëstablished harmony, 224, 225; his failure, 225.

Liber pro Insipiente, Gaunilo's described, 18, 19.

Locke, John, his use of cosmological reasoning, 125, 126; on passive power, 208; on primary and secondary qualities, 297.

Lotze, Hermann, rejects Anselm's reasoning, 28; accepts Anselm's conclusion, 16, 30, 31; on revelation, 78–80; on creation, 94 (footnote); on limits of cosmological argument, 126, 127; on sound and color, 256; his relation to Berkeley, 331–336.

MACH, E., quoted, 305.

Man, a religious animal, 83; proofs of his existence as a person, 338–340.

Mansel, Dean, his agnosticism, 6.

Materialistic paralogism, 309.

Matter, eternity of, 99–110; scientific disproof of, 124.

Matter and Force, possible conceptions of their relations, 145; Calderwood on, 122, 123.

Maxwell, J. Clerk, quoted on atoms, 104, 105 (footnote).

McCosh, Jas., quoted, 171.

Mill, J. S., on final causes, 165; on chance, his Logic quoted, 171, 172; on the human eye, 186, 187.

Motor Nerves, 243, 244.

Müller, Max, his translation of Kant's Critique of Pure Reason quoted, 38, 39, 150–153, 163, 164.

NATURAL history of atheism, 313.

Nerves, sensor and motor, 243–245.

Newton, Sir Isaac, his *Principia* referred to, 3, 4; mentioned, 5, 43, 221.

Noiré, Ludwig, quoted on idea of the infinite, 38, 39, 76.

Norton, Prof., on the nature of force, 139.

OBJECTIVE IDEALISM, 292.

Objectivity, ultimate grounds of, 257–259.
Occasionalism, its special value, 218–220; its insufficiency, 222.
Ontological argument, Anselm author of, 14; history of, 15, 16; Kant's rejection of, 14, 28, 29 (footnote); attitude of Thomas Aquinas, Albertus Magnus, Duns Scotus, Hegel, Shedd, Flint, and Lotze toward, 15, 16, 28, 29 (footnote); Shedd's defense of, 19–22; Sheldon's estimate of, 24; its fallacy, 18, 19; refutation of, 25–27; Bowne's rejection of, 28.
Organic sense, 234, 235.
Owen, Richard, on evolution and teleology, 185.

Pantheism, nature of, 230.
Paralogism, materialistic, 309.
Paulsen, Friedrich, his Introductory to Philosophy quoted on materialism, 321–324.
Pearson, Bishop, quoted, 7, 8, 9, 10.
Persons, finite, 336–340.
Philosophy and science, interaction of, 148, 149.
Physics, physiology, and psychology, general formula of relation of, 263–268.
Physiology, physics, and psychology, general formula of relation of, 263–268.
Plato, mentioned, 146.
Porter, Noah, on final causes, 177; on the organism as stimulated, 306, 307.
Preëstablished Harmony, 224.
Primary qualities, 297.
Properties, secondary, 256, 257–297.
Propositions, six, on relations of physics, physiology, and psychology, 263–268.
Psychology, physiology, and physics, general formula of relation of, 263–268.

Qualities, primary and secondary, 297–299.

Rationality, in nature, 160.

Realism, Platonic and Aristotelic, 100 (footnote); common, 299; transfigured, 301.
Reality, ontological and phenomenal, 310; categories of, 310–312; rational, 320.
Revelation, Descartes's exposition of, 77, 78; Lotze on, 78–80.

SCHLEIERMACHER, F., his Dialektic quoted, 161.
Schopenhauer, reduces all force to will, 138; on unconscious intelligence, 183.
Schwegler, Albert, his History of Philosophy cited, 5 (footnote); quoted on Descartes, 46 (footnote).
Secondary properties, 256, 257.
Sense, organic, 234, 235; of temperature, 235–237; of taste, 237–239; of smell, 230–241; of hearing, 245–249; of sight, 252–255; of touch, 256, 257.
Sensor nerves, 243.
Septuagint, chronology of, 97, 98; E. B. Tylor on, 98 (footnote).
Shedd, Dr. W. G. T., accepts ontological argument, 16; supplies a translation of, 17, 18; his History of Christian Doctrine quoted, 17, 18, 19, 20, 21, 22; refutation of, 22–27; final remark on, 29 (footnote).
Sheldon, Dr. H. C., his History of Christian Doctrine quoted, 24.
Sight, sense of, 252–255.
Smell, sense of, 239–241.
Socrates, on the human organs, 153, 154.
Soul and body, interaction of, 219–222.
Space and time, 262, 263.
Spencer, Herbert, his doctrine of the unknowable, 6; his First Principles quoted on the First Cause, 119; and on the nature of force, 138.
Spinoza, Benedict, his pantheism, 9.
Stuckenberg, J. H., his Introduction to the Study of Philosophy quoted, 128.

Substance, 230–232; Dr. James Ward on, 231–233 (footnote).
Summers, Dr. T. O., his Systematic Theology cited, 13 (footnote); his reply to Dr. Chalmers, 110.

TASTE, sense of, 237–239.
Teleology, Aristotle on, 156–158; relation to homology, 159; Kepler, Agassiz, Ueberweg, and Schleiermacher on, 159–161; scientific misconception of, 162; nature of the argument from, 163, Kant's summary of, 163, 164; Bowne on, 193, 194; Darwin's concessions concerning, 194–196.
Temperature, sense of, 235–237.
Things, isolated existence of, denied, 228; results of affirming, 230; knowledge of, 234–268; defined, 260.
Tillottson, Archbishop, quoted, 192.
Time and space, 262, 263.
Touch, sense of, 256, 257.
Transfigured realism, 301.
Tylor, E. B., on chronology of the Septuagint, 98 (footnote).
Tyndall, John, on heat, 200 (footnote); on unthinkability of passage from brain to sensation, 249.

UEBERWEG, FRIEDRICH, his History of Philosophy cited, 5 (footnote); 157 (footnote); quoted on idea of the infinite, 38; his Logic quoted, 161.
Ultimate grounds of objectivity, 257–259.
Unconditioned, the, and uncaused, 206.
Universe, eternity of, 96–99.
Unknowable, Spencer's doctrine of, 6.

VALENTINE, his Natural Theology quoted, 168, 169.

WALLACE, ALFRED RUSSELL, on matter, force, and will, 138; accepts dynamical conception of matter, 145; on evolution and teleology, 185.

Ward, Dr. James, his Naturalism and Agnosticism quoted on substance, 231–233 (footnote).
Water, freezing of, 197–200.
Watson, Professor John, his Christianity and Idealism quoted, 320, 321.
Weber, Alfred, his History of Philosophy quoted on Descartes, 65; on Berkeley, 326, 334.
Weight, nature of, 262.
Winchell, Alexander, on the conception of intelligent power, 138; his analysis of the conception of causality, 140–142; justification of, 142, 143; his Reconciliation of Science and Religion quoted, 143, 144, 145, 147.

XENOPHANES, his doctrine, 5 (footnote).
Xenophon, his Memorabilia quoted, 153.

ZÖLLNER, on Schopenhauer and Wallace, 139.

THE END

Date Due

Princeton Theological Seminary-Speer Library
1 1012 01012 8017